Codfee  COD-   Cod   C			7-17-18-18	_					
186			Doffell						
512		H.	3	1	2"	Ha	5,0	755	;
74	•	و •	215	<u> </u>	4, 160	, , ,	5 6	21.3	i
11 426									
1476	•	_	286	<15	סנר,	4.7	4.7	30.0	
202	<b>V</b> .	_	426	۸ 5	1,970	ر ب	24.0	10.0	
203	٧		134	<b>(1)</b>	1,230	3.6	73	5.5	
4th 4th 4th 6th 11.0  6th 4th 4th 4th 6th 11.0  6th 4th 4th 4th 6th 11.0  2th 4th 4th 7th 11.1  357 4th 11.2  18th 4th 4th 7th 6th 11.0  315 4th 11.2  315 4th 11.2  315 4th 11.2  316 4th 11.2  317 4th 4th 4th 7th 6th 11.2  318 4th 4th 4th 7th 11.2  310 4th 4th 4th 7th 11.2  310 4th 4th 4th 4th 7th 11.2  310 4th 4th 4th 4th 4th 7th 11.2  310 4th	•	_	203	<15	012,2	و	53.0	15.0	
2.1 (15 (15) (10) (17) (17) (17) (17) (17) (17) (17) (17	<b>Y</b>		407	<1×	411,5	و.و	0.٤١	0.16	
2034 LM 002  204 LM 415 870 7.1  357 LM 518 LM 7.2  186 LM 518 LM 7.1  188 LM 615 LM 600  158 LM 615 LM 600  158 LM 615 LM 600  159 LM 615 LM 600  159 LM 615 LM 600  230 LM 615 LM 610  240 LM 615 LM 610  154 LM 615 LM 610  155 LM 615 LM 613  154 LM 615 LM 613  155 LM 615 LM 613  157 LM 615 LM 615  158 LM 615 LM 613	<b>Y</b>	_	<b>59</b>	<15	0,040	۲.۲	2.1	% O:	
2357		÷							
357 15 1940 7.0 4.3 670 (15 3,863 7.2 19.0 186 (15 3,863 7.2 19.0 186 (15 1,970 7.1 5.0 158 (15 1,930 6.7 9.9 159 (15 3,110 7.0 3.1 230 (15 3,110 7.0 3.1 2410 (15 3,120 7.3 3.2 114 (15 3,230 6.5 1.1 253 (15 3,131 6.5 11,873 (15 3,131 6.5 11,873 (15 3,131 6.5 11,873 (15 3,131 6.5			112460	600					
1 5       1,9460       7.0       8.13         4 5       2,863       7.2       14.0         4 5       2,863       7.1       5.0         4 5       1,430       6.7       6.9         4 5       1,930       7.1       6.9         4 5       1,930       7.3       3.6         4 5       3,100       7.3       3.2         4 5       3,130       6.7       3.2         4 5       3,230       6.5       1.1         4 5       3,230       6.5       1.1         4 5       3,230       6.5       1.1         4 5       3,130       6.0       1.6	9 >		603	×15	870	1.7	2	4.4	
415       2,843       7.1       14.0         415       2,470       7.1       5.0         415       1,931       6.7       4.0         415       1,031       6.7       6.9         415       439       7.1       0.9         415       3,10       7.3       3.0         415       3,10       7.3       3.1         415       3,10       7.3       3.1         415       3,20       6.5       1.1         416       3,20       6.5       1.1         417       3,20       6.5       1.1         418       3,20       6.5       1.1	~		357	<u>ام</u>	9,960	7.0	هم ت	37.0	
<15	1.		670	۲۱۶	5,863	7:7	0.4.	180.0	
\( \text{i} \)      \( \text{i}	· 🗸		186	415	3,670	7:7	8.0	75.0	
415 (.1) 521  415 (439 7.1 6.9  0.9  415 (1,930 7.3 2.0  415 (3,10 7.0 3.1  415 (3,20 6.7 3.1  715 (3,30 6.5 3.1  71 (3,50 6.5 3.1  71 (3,	r <b>∵</b> . t		158	×15.	086,1	<b>6.</b> 5	يد 0	12.0	
415       439       7.1       0.9         416       1,930       7.3       3.0         415       3,110       7.2       3.1         415       3,110       7.2       3.1         415       11,870       6.7       3.6         415       3,130       6.5       1.1         415       3,130       6.0       1.6	₹		315	۷۱۷	,03	<b>C.</b> 3	5.7	67.0	
(1)	~		手	415	434	7.7	9.0	15:84	
\( \text{i} \)     \( \text{i} \)    \( \text{i} \)     \( \text{i} \)     \( \text{i} \)     \( \text{i} \)   \( \text{i} \)    \( \text			048611						
\$\limins_{1}\text{S} \\ \limins_{1}\text{II} \\ \limins_{1}\text{S}	9		154		1,930	7.3	0.0	5.4	
	~		230	415	3,110	7.0	3.1	26.0	
12   32   150	<b>V</b>		2,110	<15	018,11	6.7	3.6	70:0	
615 3,520 6.3 7.1 615 3,130 6.0 1.6	1		1 18	۲۱۶ ۱۶	3,380	1.1	3.2	9.0	
515 6.0 1.6	₹		129	<15	3,520	6.3	7.1	290.0	
<15 3,130 60 1.6	->		153	× 15	3,231	6,5	7.	18.0	
	Ţ		£8	SI>	3,130	0,0	1.6	5:5	

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### RECEIVED NOV 3 0 1992

### SPECTRA Laboratories, Inc.

2221 Ross Way •

Tacoma, WA 98421 •

(206) 272-4850

November 13,  AK-WA 401 Alexander Tacoma, WA  Attn: Rocky E	r Bldg. 580 98421	Sample ID: Seafisher Project: NPDES Undocking P.O. #7008-003-57P Sample Matrix: Water Date Sampled: 11-5-92 Date Received: 11-6-92 Spectra Project: S211-039 Spectra #1003
pН		7.6
Oil and Greas	se, mg/L	0.8
Total Suspend	led Solids, mg/L	16
Total Recover	rable Metals, ug/L	
Lead	(Pb)	<40
Copper	(Cu)	159
Zinc	(Zn)	63
Total Dissolve	ed Metals, ug/L	
Lead	(Pb)	< 40
Copper	(Cu)	90
Zinc	(Zn)	30

pH testing performed by EPA Method 9040
Fats, Oil and Grease testing by EPA Method 413.2 Partition Infrared.
Total Suspended Solids performed by Standard Method 2540-D
Total Recoverable Metals performed by EPA Method 200.2
Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

### RECEIVED NOV 3 0 1992

### SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

November 13,  AK-WA 401 Alexande Tacoma, WA  Attn: Rocky I	r Bldg. 580 98421	Sample ID: Background Project: NPDES Undocking P.O. #7008-003-57P Sample Matrix: Water Date Sampled: 11-5-92 Date Received: 11-6-92 Spectra Project: S211-039 Spectra #1004
pН		7.6
Oil and Great	se, mg/L	< 0.1
Total Suspend	ded Solids, mg/L	2.4
Total Recove	rable Metals, ug/L	
Lead	(Pb)	<40
Copper	(Cu)	8
Zinc	(Zn)	20
Total Dissolv	ed Metals, ug/L	
Lead	(Pb)	<40
Copper	(Cu)	8
Zinc	(Zn)	6

pH testing performed by EPA Method 9040
Fats, Oil and Grease testing by EPA Method 413.2 Partition Infrared.
Total Suspended Solids performed by Standard Method 2540-D
Total Recoverable Metals performed by EPA Method 200.2
Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

2221 Ross Way

Tacoma, WA 98421 •

(206) 272-4850

November 13, 1992

AK-WA 401 Alexander Bldg. 580 Tacoma, WA 98421

Attn: Rocky Becker

METHOD BLANK

Date Analyzed: 11-10-92 Spectra Project: S211-039 Applies to Spectra #'s

1003 and 1004

Total Recoverable Metals, ug/L

Lead

(Pb)

<40

Copper

(Cu)

Zinc

(Zn)

7

Total Dissolved Metals, ug/L

Lead

(Pb)

< 40

Copper

(Cu)

4

Zinc

(Zn)

8

Total Recoverable Metals performed by EPA Method 200.2 Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

### **RECEIVED NOV 3 0 1992**

### SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

November 13, 1992

AK-WA 401 Alexander, Bldg. 580 Tacoma, WA 98421

Attn: Rocky Becker

EPA Method 413.2 Sample Matrix: Water Spectra Project: S211-039 Applies to Spectra #'s 1003 and 1004

### OIL AND GREASE QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Method Blank

Units: mg/L

Date Analyzed: 11-2-92

Compound	Sample <u>Result</u>	Spike <u>Amount</u>	Spike <u>Result</u>	% Recovery	Dup. <u>Result</u>		% RPD
Oil and Grease	< 0.1	11	10	93	11	94	1

### METHOD BLANK

Date Extracted: 11-11-92

Date Analyzed: 11-11-92

Oil and Grease, mg/L

< 0.1

SPECTRA LABORATORIES, INC.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

November 13, 1992

Mr. Rocky Becker AK-WA 401 Alexander Bldg. 580 Tacoma, WA 98421

RE: NPDES Undocking

Dear Mr. Becker,

Please find enclosed the results for the above referenced project.

If you have any questions or need any further information, please feel free to call any time.

Sincerely,

SPECTRA LABORATORIES, INC.

Mike Minner Lab Director

Enclosure

### AK - WA Inc.

401 ALEXANDER · BLDG. 588 TACOMA, WA 98421 TELEPHONE (206) 272-0108 FAX (206) 272-4952

01 December 1992

( ) A) 所以。 分數用的原料。

Department of Ecology Water Quality Program Mail Stop PV-11 Olympia, WA 98504-6811

Attention: Sandra Stephens

Subject:

Spill Event Report - Annual

Dear Sandra:

Enclosed please find AK-WA's 1991-1992 Spill Report. This report reviews all significant spills and leaks of toxic or hazardous pollutants which occurred after the permit was issued.

If you should require any further information please don't hesitate to contact me at (206) 272-0108, extension #13. Thank you.

Regar us

Rocky Becker

Environmental Hazards

RB/syd cc: File Enclosure

#05-152



### 1991/92 SPILL REPORT

### Spill No. 1

DATE: 06-04-92 at 2:30 PM

NAME: Diesel Fuel

QUANTITY RELEASED: 250-300 Gallons

LOCATION: Sandgrit Storage Area

CAUSE: During removal of holding tank the discharge

valve was broken off.

CLEAN UP MEASURES: Pump/Absorbents. The fuel was

contained in a burned area.

PERCENTAGE RECOVERED: 95% liquid, 2% diapers, 3% sand.

PREVENTION OF RECURRENCE: Installed alternative valving.

COMMENTS: Human error! This unit was being lifted by

crane. Through misdirection this unit was damaged. Fortunately, this occurred in a

contained area.

### 1991/92 SPILL REPORT

### Spill No. 2

DATE: 11-19-92 at 8:00 AM

NAME: Diesel Fuel

QUANTITY RELEASED: 20 Gallons

LOCATION: Bldg. 588, South Side In Front Of Pipeshop.

CAUSE: Fuel Truck Hose Failure.

CLEAN UP MEASURES: Oil Absorbent/Floor Dry.

PERCENTAGE RECOVERED: 98%

PREVENTION OF REOCCURRENCE: None

COMMENTS: The hose failed at the truck pump while pumping.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

December 9, 1992  AK-WA 401 Alexander Bldg Tacoma, WA 9842  Attn: Rocky Becker	1	Sample ID: Excellance Project: NPDES Undocking P.O. #70080032077P Sample Matrix: Water Date Sampled: 11-29-92 Date Received: 11-30-92 Spectra Project: S211-240 Spectra #1543
pН		6.7
Oil and Grease, mg	/L	<0.1
Total Suspended So	lids, mg/L	30
Total Recoverable	Metals, ug/L	
Lead	(Pb)	<u>. 20</u> .
Copper	(Cu)	26in
Zinc	(Zn)	1294
Total Dissolved Me	tals, ug/L	
Lead	(Pb)	<40
Copper	(Cu)	<2
Zinc	(Zn)	<6

pH testing performed by EPA Method 9040
Fats, Oil and Grease testing by EPA Method 413.2 Partition Infrared.
Total Suspended Solids performed by Standard Method 2540-D
Total Recoverable Metals performed by EPA Method 200.2
Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

AK-WA 401 Alexander Bld Tacoma, WA 9842 Attn: Rocky Becke	21	Sample ID: Background Project: NPDES Undocking P.O. #70080032077P Sample Matrix: Water Date Sampled: 11-29-92 Date Received: 11-30-92 Spectra Project: S211-240 Spectra #1544
pН		7.1
Oil and Grease, m	g/L	< 0.1
Total Suspended S	olids, mg/L	7.0
Total Recoverable	Metals, ug/L	
Lead	(Pb)	<40
Copper	(Cu)	15
Zinc	(Zn)	12
Total Dissolved M	etals, ug/L	
Lead	(Pb)	<40
Copper	(Cu)	3
Zinc	(Zn)	12

pH testing performed by EPA Method 9040
Fats, Oil and Grease testing by EPA Method 413.2 Partition Infrared.
Total Suspended Solids performed by Standard Method 2540-D
Total Recoverable Metals performed by EPA Method 200.2
Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

2221 Ross Way

Tacoma, WA 98421

(206) 272-4850

December 9, 1992

AK-WA 401 Alexander Bldg. 580 Tacoma, WA 98421

Attn: Rocky Becker

**METHOD BLANK** 

Sample Matrix: Water Spectra Project: S211-240 Applies to Spectra #'s

1543 and 1544

Total Recoverable Metals, ug/L

Lead (Pb) <40

Copper (Cu) 4

Zinc (Zn) 6

Total Dissolved Metals, ug/L

Lead (Pb) <40

Copper (Cu) 4

Zinc (Zn) 6

Total Recoverable Metals performed by EPA Method 200.2 Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

2221 Ross Way •

Tacoma, WA 98421 • (206) 272-4850

December 9, 1992

AK-WA 401 Alexander Bldg. 580 Tacoma, WA 98421

Attn: Rocky Becker

EPA Method 413.2 Sample Matrix: Water Spectra Project: S211-240 Applies to Spectra #'s 1543 and 1544

### OIL AND GREASE QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Method Blank

Units: mg/L

Date Analyzed: 11-24-92

Compound	Sample	Spike	Spike	%	Dup.	Dup.	%
	Result	<u>Amount</u>	Result	Recovery	Result	Recovery	RPD
Oil and Grease	< 0.1	11	10	93	11	95	2

### METHOD BLANK

Date Extracted: 12-8-92

Date Analyzed: 12-8-92

Oil and Grease, mg/L

< 0.1

SPECTRA LABORATORIES, INC.

## DMR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 001

# UNDOCKING DISCHARGE REPORTS

Date		Star	pH Standard Units	nits			170	Oil & Grease mg/L	80			rotal S	mg/L	Total Suspended Solids	
	Back	Background		Discharge	99.	Back	Background	נס	Discharge	96	Backg	Background	a	Discharge	
Frequency	Nin	Max	Nin	Avg	Нах	λυσ	Мах	UTH	Avg	Мах	Åvg	Иах	иiл	Avg	Max
8-10/91 1	7.5	7.7	7.1	7.3	7.4	<0.5	<0.5	<b>&lt;0.5</b>	0.5	3.4	17.3	25.7	9.1	21.1	29
11/91-1/92 /			6.8	7.3	7.6			<0.5	3.5	11.2			5.9	100.0	205
2-4/92 2	7.3	7.6	7.6	7.7	7.8	1.7	2.6	1.9	2.5	3.0	12.1	21.0	22.0	45.1	83
5-7/92 #	7.6	7.7	7.4	7.5	7.6	2.0	6.0	0.3	1.3	2.7	2.8	5.2	18.0	55.0	95
8-10/92 6"	6.6	8.2	6.7	7.4	8.1	3.4	16.0	1.0>	5.5	27.0	6.6	15.0	10.0	40.3	63
	7.1	7.6	6.7	7.2	7.6	1.0>	<0.1 <0.1 0.4	1.0>	0.4	0.8	4.7	7.0	16.0	23.0	30

Frequency of analysis is based on the number of ships that were dry docked greater than 4-days and launched for that quarter.

Effluent limits have not been established for undocking discharge water. Areas shaded exceed hydroblasting daily maximum effluent limitations for outfall no. 001.

<sup>&</sup>quot;Background frequency 3.

<sup>&</sup>lt;sup>2</sup>Background frequency 5

DNR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2
OUTFALL NO. 001

# UNDOCKING DISCHARGE REPORTS

Date		Tot	Total Copper ug/L	Jer			Disso	Dissolved Copper ug/L	pper			20	Total Lead ug/L	ā	·
	Background	round		Discharge		Background	ound		Discharge		Backg	Background		Discharge	
Frequency	àνg	Hax	Min	. Avg	Мах	Avg	Nax	Nin	λvg	Иах	Avg	Nax	ити	Avg	Max
1 16/01-8	123.3	1140	<100	436.7	800	123.3	640	<100	156.7	440	16.7	100	<100	16.7	100
11/91-1/92 1			210	3302.5	7600			190	517.5	890			<100	138.8	280
2-4/92 2	75.0	90	730	1055.0	1380	60.0	90	510	1655.0*	2800	<100	<100	<100	<100.0	<100
5-7/92 44	26.3	59	8	463.8	870	6.3	16	27	162.3	339	<b>&lt;40</b>	<40	<40	<40.0	<40
8-10/92 6¤	32.4	108	18	748.6	2515	9.2	9.	1	250.5	628	:	60	<40	<40.0	<40
11/92-1/93 2	11.5	15	159	210.0	261	5.5	8	۵	46.0	90	<b>^40</b>	<40	<b>&lt;40</b>	46.0	52
Sample type composite.	este.														

Frequency of analysis is based on the number of ships that were dry dock greater than 4-days and launched for that quarter.

Shaded areas exceed Acute marine water quality criteria amounts specified in 173-201A-040 WAC.

<sup>\*</sup> means dissolved results are greater than total results.

<sup>&</sup>quot;Background frequency 3.

Background frequency 5.

DHR SUNNARY AK-WA INC. PERHIT NO. WA-004014-2
OUTFALL NO. 001

# UNDOCKING DISCHARGE REPORTS

Date		7.0	Dissolved Lead ug/L	Lead			17	Total Zinc ug/L	nc			Die	Dissolved Zinc	Zinc	
	Back	Background .		Discharge		Background	round		Discharge		Backs	Background		Discharge	
Frequency	Avg	Max	atn	λνς	Nax	Avg	Мах	N Lin	Avg	Мах	λvg	Мах	M±n	Ava	Мах
8-10/91									·					. 9	i
1 16/01	10./	100	<100	16.7	100	293.3	600	100	258.3	500	205.0	100	200	205	300
11/91-1/92 /			<100	52.5	210		٠	290	0.0291	3150			300		200
2-4/92 2	<100.0	<100	<100	<100.0	>100	115.0	140	470	1185 0		S	**			
								1	0.0011	DOGT	0.01	*067	250	1125	2000*
5-7/92	<40.0	40	<b>^40</b>	<40.0	<40	15.0	33	77	299.5	520	14.3	31	55	120	189
8-10/92 6 <sup>37</sup>	<40.0	<b>6</b>	<b>^40</b>	<40.0	<40	8.6	16	59	273.8	986	9.4	14	23	96	193
11/92-1/93 2	<40.0	<40	<b>^40</b>	<40.0	ŝ	16.0	20	ည	96.0	129	9.0	12	â	20	3
Sample type composite.	osite.	·													

Frequency of analysis is based on the number of ships that were dry dock greater than 4-days and launched for that guarter.

Shaded areas exceed Acute marine water quality criteria amounts apecified in 173-201A-040 WAC.

\* means dissolved results are greater than total results.

<sup>\*</sup>Background frequency }.

<sup>&</sup>quot;Background frequency 5.

# DHR SUHHARY AK-WA INC. PERHIT NO. WA-004014-2 OUTFALL NO. 002

## STORM WATER NORTHLY

DATE	92	Oil & Gresse <sup>1</sup> mg/L	100	Tot	Total Suspended Solids ng/L	ended !	Sta	pH³ Standard Units	nits		IR Copper ug/L	•		TR Linc L ug/L	ę		IR Lead 7	<b>.</b>
Frequency	Nin	Avgʻ	Max	ити	Avg	Nax Y	Nin	Avg	Hax 4	Hin	Avg	Xax Y	uŢV	λνg³	Yax Y	иіл	Avg <sup>3</sup>	Max 4
1 16/01-6		9.5			5.7			6.4			1800			380	}		4240.0	
11/91-1/92 3	-	3.9 23.3	60.1 27.0	27.0	56.5	97.6	6.4	6.6	6.8	590	968.3	1750	3100	3890	4700	<100	140.0	420
2-4/92 3	2.5	2.5 10.1 18.4 13.0	18.4	13.0	67.3	105.0	6.4	6.6	6.8	170	630.0	1250	370	0610	8800	<100	0.001>	001>
5-7/92 1		5.6			23.3			6.6			512.0			4160			<40.0	
8-10/92 3	1.7	1.7 10.1 24.0	24.0	5.5	48.5	110.0	6.6	7.2	7.8	134	282.0	426	1230	1990	2770	<40	<40.0	<40
11/92-1/93 3 2.1 9.7 15.0 3.0 42.3	2.1	9.7	15.0	3.0	€2.3	71.0	6.5	6.8	7.2	69	244.7	462	000	8871	2210	<b>&lt;40</b>	36.3	109

Flow of 20 gallons per min. was noted for 9-10/91 DMR. All other DMRs had no flow reported.

Frequency of analysis is based on number preformed/quarter.

Shaded areas are permit violations.

<sup>&#</sup>x27;Sample type grab.

Sample type composite.

The quarterly average is the average of "monthly values' over a three month period.

<sup>&#</sup>x27;The quarterly maximum is the highest recorded "monthly value" over a three month period.

### DHR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 002

### STORMWATER QUARTERLY

Date	and the second		TR Nicke. ug/L	25		TR Mercury ug/L	5
Frequenc	<b>7</b>	Min	Avg	Max <sup>7</sup>	Hin	Avg 6	Nax ?
11/91-1/92	3	<100	<100	<100	<1	<1	<1
2-4/92	3	<100	<100	<100	<1	<1	<1
5-7/92	1		<15			<6	
8-10/92	3	<15	<15	<15	<1	<1	<1
11/92-1/93	3	<15	<15	<15	<1	<1	<1

Frequency of analysis is based on number preformed/quarter.

Shaded areas are noted as permit violations, however, this may not be the case. The contract laboratory established detection limit was greater than the NPDES effluent limit of 75.0 ug/L for TR nickel and 2.1 ug/L for mercury. Therefore, the reported result could be below the effluent limitation.

Sample type composite.

<sup>&</sup>lt;sup>6</sup>The quarterly average is the average of "monthly values" over a three month period.

<sup>&</sup>lt;sup>7</sup>The quarterly maximum is the highest recorded "monthly values" over a three month period.

### DHR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 002

### STORMWATER QUARTERLY/VOC'S

- 1. Monitoring period not dated. Nothing was reported below <0.5
- 2. 11/91-1/92, Results reported for the following compounds:

1,1-Dichloroethene	3.5 ug/l
Benzene	1.7 ug/l
Trichloroethene	1.0 ug/l
1,4-Dichlorobenzene	3.5 ug/l
1,2-Dichlorobenzene	1.1 ug/l
Ethylbenzene	241.0 ug/l
Toluene	6.4 ug/l
Trichlorofluoromethane	36.6 ug/l

3. 2-4/92, Results reported for the following compounds:

Cloroform 24.7 ug/l Bromodichloromethane 2.5 ug/l

4. 5-8/92, Results reported for the following compound:

2-Butanone 200.0 ug/1

Also, reported values changed.

5. 8-10/92, Results are reported less than a value.

## DAR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 003

## STORM WATER MONTHLY

DATE	041	Oil & Grease		Total	pepuedans I	, pep		рн			TR Cooper	-		TR Zinc	_		TR Lead ?	_
		mg/L			Solids mg/L		Stan	Standard Units	nits		ng/L			ng/E			7/fin	
Frequency	Min	Avg <sup>10</sup> Hax <sup>11</sup>		ИІп	Avg 10	Max	Min	Avg	Max"	Nin Avg <sup>16</sup> Max" Min Avg <sup>16</sup>	٠ ا	Max"	Kin	Avg 10	Nax" Nin	Min	Avy 10	Nax"
9-10/91		15.7			2.0			6.4			1800.0			380.0			4210.0	
11/91-1/92 3 11.9 18.5 26.7	11.9	18.5	26.7	22.0	314.7	889	9.9	9.9	6.9	565	1711.7	2820	3100	1956.7 7900	2900	<100	373.3	700
2-4/92	<0.5	7.3	13.5	35.0	117.3 242		6.3 6.5	6.5	8.9	470	970.0	1260	4660	5620.0 9600	9600	<100	<100.0	<100
5-7/92 1		1.4			<b>*</b> **			7.1			0.609			870.0			<10.0	
8-10/92 3	5.0	9.1	14.0 37.0	37.0	97.3 180	180	7.0	7.0 7.3 7.7	7.7	98T	404.3	670	1960	1960 2831.0 3863	3863	×40	<10.0	0\$>
11/92-1/93 3	6.0	3.5	3.5 5.7	8.5	32.5	67	6.5	8.9	7.1	67 6.5 6.8 7.1 144	205.7	315	439	439 983.3 1480	1480	<40	33.7	101

Flow of 20 gallons per min. was noted for 9-10/91 DMR. All other DMRs had no flow reported.

Frequency of analysis is based on number preformed/quarter.

Shaded areas are permit violations.

Sample type grab.

Sample type composite.

<sup>&</sup>lt;sup>10</sup>The quarterly average is the average of "monthly values" over a three month period.

<sup>&</sup>quot;The quarterly maximum is the highest recorded "monthly value" over a three month period.

### DHR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 003

### STORMWATER QUARTERLY

Date			TR Nickel ug/L	12		TR Mercury ug/L	72.
Frequence	57	Min	λvg <sup>is</sup>	Hax <sup>14</sup>	Min	Avg 13	Nax M
11/91-1/92	3	<100	<100	<100	<1	<1	<1
2-4/92	3	<100	<100	<100	<1	<1	<1
5-7/92	1		<15			<6	
8-10/92	3	<15	<15	<15	<1	<1	<1
11/92-1/93	3	<15	<15	<15	<1	<1	<1

Frequency of analysis is based on number preformed/quarter.

Shaded areas are noted as permit violations, however, this may not be the case. The contract laboratory established detection limit was greater than the NPDES effluent limit of 75.0 ug/L for TR nickel and 2.1 ug/L for mercury. Therefore, the reported result could be below the effluent limitation.

<sup>12</sup> Sample type composite.

<sup>&</sup>lt;sup>13</sup>The quarterly average is the average of "monthly values" over a three month period.

<sup>&</sup>lt;sup>14</sup>The quarterly maximum is the highest recorded "monthly values" over a three month period.

### DMR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 003

### STORMWATER QUARTERLY/VOC'S

 Monitoring period not dated. Result reported for the following compound:

Methylene Chloroide

0.53 ug/l

2. 11/91-1/92, Result reported for the following compound:

Ethylbenzene

35.0 ug/l

3. 2-4/92, Results reported for the following compounds:

1,4-Dichlorobenzene	10.1 ug/l
Cloroform	2.2 ug/l
1,2-Dichlorobenzene	27.6 ug/l
1.3-Dichlorobenzene	3.9 ug/l
Toluene	1.1 ug/l
Trichlorofluoromethane	0.8 ug/l
Chlorobenzene	1.0 ug/l

4. 5-8/92, Results reported for the following compound:

2-Butanone

69.0 ug/l

5. 8-10/92, Results reported for the following compound:

Toluene

7.0 ug/l

## DHR SUHHARY AK-WA INC. PERNIT NO. WA-004014-2 OUTFALL NO. 004

### STORM WATER HONTHLY

DATE	Oil	Oil & Grease <sup>15</sup> mg/L	10013	Total S	1 Suspended Solids mg/L	ged 15	Stan	pH <sup>16</sup> Standard Units	nite		TR Cooper <sup>14</sup> ug/L	<b>"</b>		TR Zinc <sup>N</sup> ug/L	14		TR Load <sup>jk</sup> ug/L	9
frequency	Nin	Avg" Hax"		Nin	Avg	Max	Min	Avg	Hex	Min	Hax Hin Avg II Hax Hin Avg II	Max	Max <sup> f</sup> Min	Avg 17 Hax 18	Nax 18	Nin	Avg 17	Max //
16/11-6		6.0			1.2			₽.9			1800.0			380.0			4240.0	
11/91-1/92 1 3.4 7.5 12.7	3.4	7.5	12.7	26.0	9.99	101	6.4 6.6 6.8 450	9.9	6.8		921.7 1750 3100	1750	3100	3706.6	4150 <100	<100	140.0	420
2-6/92	1.9	1.9 22.6 52.4 28.0	52.4	28.0	123.3 225	225	6.2 6.5	6.5	6.9 340	340	1686.7 3100	3100	3600	7466.7 12300	12300	<100	110.3	205
5-7/92		2.0			5.4			7.3			154.0			1930.0			<40.0	
8-10/92	3.1	3.3	3.6	9.0	35.0	70 6.7 6.9 7.1	6.7	6.9	7.1	178	839.3	2110	3110	839.3 2110 3110 6110.0	11840	O\$>	<40.0	0\$>
11/92-1/93 1 1.6 4.3 7.1	1.6	4.3	7.1	5.5	104.5 290 6.0 6.3 6.5	290	6.0	6.3	6.5	87	87 156.0 253	253	3130	3130 3293.0	3520	<40	24.0	72

Flow of 20 gallons per min. was noted for 9-10/91 DMR. All other DMRs had no flow reported.

Frequency of analysis is based on number preformed/quarter.

Shaded areas are permit violations.

<sup>&</sup>quot;Sample type grab.

<sup>&</sup>quot;Sample type composite.

<sup>&</sup>quot;The quarterly average is the average of "monthly values" over a three month period.

<sup>&</sup>quot;The quarterly maximum is the highest recorded "monthly values" over a three month period.

### DHR SUHHARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 004

### STORMWATER QUARTERLY

Date			TR Nickel ug/L	19		TR Mercury ug/L	17
Frequen	cy	Min	Avg <sup>20</sup>	Max <sup>21</sup>	Hin	Avg	Max 41
11/91-1/92	3	<100	<100	<100	<1	<1	<1
2-4/92	3	<100	37	211	<1	<1	<1
5-7/92	1		<15			<6	
8-10/92	3	<15	<15	<15	<1	<1	<1
11/92-1/93	3	<15	<15	<15	<1	<1	<1

Frequency of analysis is based on number preformed/quarter.

Shaded areas are noted as permit violations, however, this may not be the case. The contract laboratory established detection limit was greater than the NPDES effluent limit of 75.0 ug/L for TR nickel and 2.1 ug/L for mercury. Therefore, the reported result could be below the effluent limitation.

<sup>19</sup> Sample type composite.

<sup>&</sup>lt;sup>20</sup>The guarterly average is the average of "monthly values" over a three month period.

<sup>&</sup>lt;sup>11</sup>The quarterly maximum is the highest recorded "monthly values" over a three month period.

### DMR SUMMARI AK-WA INC. PERNIT NO. WA-004014-2 OUTFALL NO. 004

### STORMWATER QUARTERLY/VOC'S

1. Monitoring period not dated. Result reported for the following compound:

Nethylene Chloroide

0.51 ug/l

2. 11/91-1/92, Results reported for the following compound:

Cloroform

2.4 ug/l

3. 2-4/92, Results reported for the following compound:

Cloroform

 $0.9 \, ug/1$ 

- 4. 5-8/92, Results are reported below detection limits.
- 5. 8-10/92, Results are reported less than detection limits.

### REPORT OF ENVIRONMENTAL REVIEW

of

AK-WA, INC. Tacoma, Washington

Prepared for

PORT OF TACOMA Tacoma, Washington

Project Number 2301-30027 April 23, 1993



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### **Executive Summary**

The Port of Tacoma requested Law/Crandall, Inc. to conduct an environmental review of the regulatory compliance status of AK-WA, Inc. Law/Crandall reviewed relevant files at the Department of Ecology Southwest Division, the Port of Tacoma, the Tacoma Fire Department, and the AK-WA facility. Law/Crandall personnel visited the facility and reviewed and observed site operations with AK-WA personnel.

Our review indicated that AK-WA appeared to be making an effort to comply with applicable environmental and waste management regulations. However, areas where AK-WA may be deficient include compliance with permit requirements for air emissions, storm water discharge, and wastewater discharge; and the adequacy of systems and procedures for containment of bulk petroleum, storage of hazardous waste, and control of spent abrasive blasting material.

The Port of Tacoma should require AK-WA to comply with all applicable regulations and to supply evidence of compliance. State and local regulatory agencies may provide guidance to AK-WA. Table 1 of this report summarizes our findings and recommended corrective measures for attaining compliance.

### 1.0 BACKGROUND AND PURPOSE

AK-WA Incorporated is located at 401 Alexander Avenue in Tacoma, Washington. AK-WA is a tenant of the Port of Tacoma and is located adjacent to the Hylebos Waterway. AK-WA's business is the repair and construction of marine vessels.

Prior to extending AK-WA's lease, the Port of Tacoma wanted to learn about the current regulatory compliance status of AK-WA. For this purpose, the Port of Tacoma retained Law/Crandall, Inc. to conduct an environmental review of the AK-WA facility. The Port of Tacoma planned to use the environmental review when considering the extension of AK-WA's lease.

### 2.0 SCOPE OF SERVICES

On March 8, 1993, Law/Crandall forwarded an Environmental Review Pre-Visit Questionnaire to Mr. Rocky Becker, the QA/Safety Director at AK-WA. We requested that AK-WA review and complete the questionnaire. Mr. Becker completed the questionnaire and returned it to Law/Crandall on March 11, 1993. Our review of the questionnaire provided us with an overall understanding of the specific regulated activities that occurred at AK-WA.

On March 10, 1993, Law/Crandall reviewed available regulatory files pertaining to AK-WA that were located at the Washington Department of Ecology (Ecology) Southwest Regional Office located in Tumwater, Washington. The files that we reviewed included the NPDES Permit file, the SPCC file, the Discharge Monitoring Report (DMR) file, the Dangerous Waste file, and the Toxic Cleanup file.

On March 10, 1993, Law/Crandall personnel met at the Port of Tacoma Administration Office with Ms. Suzanne Dudziak, Environmental Program Manager; Mr. Robert J. Dewald, Senior

Director of Industrial Development & Real Estate; Mr. William S. Kittrell, Director of Real Estate Operations; and Mr. Bob Emerson, Property Manager. During this meeting we obtained written information concerning AK-WA available from the Port of Tacoma files, and interviewed these Port of Tacoma personnel about compliance issues at AK-WA.

On March 17, 1993, Law/Crandall conducted an on-site tour of the AK-WA facility. We interviewed Mr. Becker; Mr. Bill Mauk, the Paint Superintendent; and Mr. Russell Corson of AK-WA's Hazardous Waste Shop. We interviewed them about the site history, operations, and environmental regulatory compliance. We also asked Mr. Mauk about abrasive blasting practices, paint application, and materials used on site. Mr. Becker escorted us on a tour of the AK-WA facility and the floating drydock.

On March, 30, 1993, Law/Crandall reviewed the regulatory file pertaining to AK-WA at the Tacoma Fire Department.

The Pierce County/Tacoma Health Department reportedly did not have regulatory files pertaining to AK-WA.

### 3.0 RESULTS

The AK-WA facility is located on a 4.8-acre site adjacent to the Hylebos Waterway. Figure 1 shows the location of AK-WA at the Port of Tacoma adjacent to Commencement Bay. The facility includes one large building, two wooden piers, and one sectional floating drydock. Figure 2 shows a sketch of the AK-WA site.

AK-WA is engaged in the repair and construction of marine vessels. Operations include abrasive blasting using copper slag and steel shot, spray painting operations using high-volume low-pressure paint guns, pipe fitting, carbon arc and other welding, insulation removal and

installation, and other industrial operations associated with the repair and construction of marine vessels. AK-WA also operates a small treatment facility for the drydock drainage water.

The following sections of this report contain brief descriptions of environmental activities at the AK-WA facility. Table 1 contains a summary of our findings and recommendations. Media-specific findings are included in Appendix A.

### 3.1 Air Pollution Control

AK-WA operates several air emissions sources at its facility. These sources include spray painting operations, wet and dry abrasive blasting operations, solvent distillation processes, and welding processes. A potential emissions source is the phosphoric acid dip tanks. AK-WA did not have available documentation from the Puget Sound Air Pollution Control Agency (PSAPCA) regarding air emissions source registration or permitting. No spray painting or abrasive blasting operations were in progress at the time of our visit.

Mr. Becker stated that AK-WA had never submitted Toxic Chemical Release Inventory Reports (Form R) to PSAPCA. Mr. Becker reported that during a site visit on March 10, 1993, Ecology requested that AK-WA determine if the amounts of toxic materials (i.e. methyl ethyl ketone) used at the facility were greater than the threshold quantities that require reporting. Ecology requested that if the inventory thresholds were exceeded, AK-WA submit the Form R reports to identify the quantities of materials released to the environment. At the time of our site visit, Mr. Becker was gathering the information needed to determine whether toxic chemical release reporting was required.

### 3.2 Water Pollution Control

AK-WA was permitted to discharge storm water and hydroblasting wastewaters to the Hylebos Waterway under its NPDES Permit No. WA-004014-2 issued June 28, 1991. A copy of this NPDES permit is contained in Appendix B. This permit allows discharge from the drydock (Outfall No. 001), and three other storm water discharges (Outfalls 002, 003, 004). The permit requires monthly monitoring and quarterly DMR reporting to Ecology.

AK-WA personnel, themselves, collect the samples required by the permit and send them to a local laboratory for analysis. All of the DMRs that we reviewed (from December 1991 through January 1993) indicated that AK-WA did not meet the NPDES permit limits for copper and zinc. The DMRs for August 1992 through January 1993 also indicated that AK-WA did not meet the NPDES permit limit for lead.

Mr. Becker reported that drydock drainage water and water from the hydroblasting system was collected and pumped to a pier-side treatment system. Treated water from this system was placed in a tank, transported to a sanitary sewer connection, and discharged to the city of Tacoma sewage treatment facilities. AK-WA did not have documentation available of a permit or authority to discharge to the city of Tacoma sewage treatment facilities.

Sludge from AK-WA's treatment system has reportedly been placed on the spent abrasive blasting media (ABM) pile and disposed of along with the spent ABM. Section 3.4 of this report provides further information about solid waste management at AK-WA.

### 3.3 Hazardous Waste Management

AK-WA was a small quantity generator of dangerous waste (U.S. EPA ID No. WAD 144405198). A copy of AK-WA's 1992 Generator Annual Dangerous Waste Report is included in Appendix B. Based on AK-WA's Annual Dangerous Waste Report for 1992, the facility has generated waste methyl ethyl ketone (MEK), acetone, still bottoms, waste oil contaminated with solvents, waste mineral spirits, and waste paint solids. AK-WA recycles waste MEK on site in a vacuum distillation unit. Other hazardous waste has been transported off site and disposed of by Chemical Handling Corporation in Bloomfield, Colorado and by SolPro, Inc. in Tacoma.

AK-WA stored hazardous waste on site in a fenced area within Building 9588. AK-WA did not have formal "satellite accumulation areas" in the production shops. The fire protection system within the wooden building 9588 appeared to be a common water spray sprinkler system. The electrical fixtures in the area were common industrial fixtures, rather than explosion- or vapor-proof fixtures. Although the area was marked "No Smoking," we observed cigarette butts on the floor outside the storage area.

At the time of our visit, we observed approximately eighteen 55-gallon drums of hazardous waste stored within the hazardous waste storage area. Other hazardous materials were also stored within the hazardous waste storage area. Drums containing acids were adjacent to drums containing flammable organics. The drums were stored on pallets (4 drums to a pallet) in rows, with the rows separated by approximately 12 to 14 inches. The labels of several of the hazardous waste drums were not readable because the drums were turned to face away from easily accessed areas.

The Hazardous Waste Shop (referred to as "copper tops") operated the hazardous waste storage area, the solvent distillation unit, and the paint can crusher. The "copper tops" were responsible for general housekeeping, inspection, and alerting appropriate production work forces when

housekeeping needed improvement. The "copper tops" reportedly have the authority to stop work if a particular activity threatens personnel safety or the environment.

AK-WA reportedly cleans its spent paint cans and then crushes them for disposal in order to reduce the amount and volume of hazardous and solid waste.

### 3.4 Solid Waste Management

AK-WA generates a large volume of spent ABM depending on workload. This material is produced in dry blasting operations in the drydock and in the blasting shed. AK-WA cleans the drydock floor of spent ABM after each blasting episode and before flooding the drydock for any docking or undocking. Mr. Becker reported that spent ABM is swept up, collected, and temporarily stored in the spent ABM storage area. The sludge generated from AK-WA's wastewater treatment system is also mixed with the spent ABM. Reportedly, Industrial Services periodically collects the spent ABM from the spent ABM storage area and delivers it to Ideal Cement for use as a raw material in its rotary kiln.

During our site visit, we noted the spent ABM pile to be stored uncovered and located on the ground surface immediately adjacent to Commencement Bay. Spent ABM appeared to have spilled into Commencement Bay from the spent ABM storage area. We also noted spent ABM at various locations on the ground in the northern portion of the AK-WA site (e.g. alongside crane rails, near catchbasins, on the shoreline riprap).

AK-WA accumulates its general refuse in dumpsters. AK-WA also places welding slag in the refuse dumpsters for disposal. The city of Tacoma transports the refuse to a local off-site refuse collection station. Production personnel collect metal scrap and segregate it by metal type so that AK-WA may sell it to local metals reclaimers.

### 3.5 Above-Ground Storage Tank Management

At the time of our site visit, AK-WA operated three above-ground tanks for petroleum storage. These tanks were: a 500-gallon diesel tank for refueling fork trucks and other production equipment, a 200-gallon gasoline tank, and an approximately 500-gallon waste oil tank. Although all these tanks had secondary containment systems, the size of those containments may not have been adequate.

Mr. Becker stated that none of the other bulk tanks that we observed were used for petroleum storage. These other tanks were skid-mounted portable tanks, marked as to contents and status (e.g. "Empty").

### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our interviews with AK-WA personnel and observations of the facility, AK-WA appears to be attempting to comply with environmental and waste management regulations. However, we noted several areas where AK-WA may not be in full compliance. These potential areas involve the following general issues:

- Absence of documentation concerning air emissions
- Exceedance of NPDES Permit discharge limits
- Unpermitted discharge of treated wastewater to the city of Tacoma sanitary system
- Adequacy of secondary containment systems for petroleum storage tanks
- Hazardous waste storage practices
- Lack of control of spent ABM

We recommend that the Port of Tacoma require AK-WA to prepare and submit a "Plan of Action with Milestones" that address each of the specific environmental review findings

**FIGURES** 

Port of Tacoma 2301-30027

Summary of Environmental Review Findings and Recommendations (Page 1 of 4)

Table 1.

Activities	rities	Regulatory Requirements	Findings	Recommended Actions
		Env	Environmental Media: Air	
14	Spray painting, blasting, distillation, welding, phosphoric acid dip tanks	PSAPCA Regulation I Section 5.03	No available documentation of registration or exemption from registration.	Either register air emission sources with P\$APCA or obtain documentation of exemption.
A2	Spray painting	PSAPCA Regulation I Section 9.16	Spray painting of small parts was conducted outdoors and not in a spray booth.	Construct or purchase an enclosed spray booth for spray painting small parts.
A3	Spray painting, blasting, distillation, welding	PSAPCA Regulation I Section 5.02 PSAPCA Regulation III Section 1.11	No available documentation of PSAPCA annual reports.	Determine reporting requirements through discussion with PSAPCA; file the required reports.
<b>A</b>	Coating	PSAPCA Regulation II Section 3.04	No available documentation of an Operations and Maintenance Plan for coating.	Develop a Plan using PSAPCA compliance guidance for spray coating operations.
AS	Toxic Chemical Release Inventory Report	PSAPCA Regulation III Section 1.11 SARA Section 313 (92 USC 11022)	No available documentation or determination whether Form R reporting is required.	Determine whether toxic materials inventory requires submittal of Form R; ccmply with requirements.

Table 1. Summary of Environmental Review Findings and Recommendations (Page 2 of 4)

Activities	ities	Regulatory Requirements	Findings	Recommended Actions
		· EBV	Environmental Media: Water	
*	Discharge of storm water and hydroblasting water	NPDES Permit WA-004014-2	Permil limits for copper, zinc, and lead were not being met; no noification of exceetances were provided to Ecology.	Develop and implement a plan to meet permit limits. A plan may include increased frequency of cleaning of site grounds and storm water catch tasins. Alternately, obtain revised permit limits. Report exceedances to Ecology.
W2	Drydock operations	NPCES Permit . WA-004014-2	Spent ABM can enter Commencement Bay from seams in the drydock.	Increase cleaning frequency of the drydock. Develop better methods to pievent spent ABM from entering the water.
W3	Sediments	NPDES Permit WA-004014-2	Sediment monitoring plan required by June 28, 1993.	Complete sediment monitoring plan.
W4	Discharge from wastewater treatment system.	Taccma City Ordinance Chapter 12.08	No available documentation of permit to discharge industrial wastewater to city of Tacona.	Obtain a permit.
WS	Secondary containment structures around phosphoric acid dip tanks, diesel tank, gasoline tank, waste oil tank, and distillation unit.	NPDES Permit WA-004014-2 WAC 173-303-640(4)(b) 40 CFR 112.7(e)	No method for removing accumulated rainwater from secondary containments; no documentation of inspections or releases of accumulated rainwater.	Develop and implement methods for removing and disposing of water from containments.  Develop inspection and documentation system for ensuring containments are emptied with no release of spilled product.

Summary of Environmental Review Findings and Recommendations (Page 3 of 4)

Table 1.

Activities	ities	Regulatory Requirements	Findings	Recommended Actions
9W	Secondary containment structures around phosphoric acid dip tanks, diesel tank, gasoline tank, waste oil tank, and distillation unit.	WAC 173-303-640(4)(b) 40 CFR 110.3 40 CFR 110.6 40 CFR 112	No documentation of containment integrity; phosphoric acid dip tanks containment appeared breached; other tank containments appeared undersized.	Verify and document integrity of all containments; verify that capacities are at least 110% of largest tank size.
W7	Discharge monitoring	NPDES Permit Holding time WA-004014-2 met; samples required.	Holding time for pH analysis not being met; samples not stored chilled as required.	Measure pH immediately after sample collection; store samples as required by the permit.
H	Distillation area, paint shop	WAC 173-303-630(5)(a)	Several containers of hazardous waste had open funnels installed in bungs or did not have lock rings installed on open top drums. AK-WA is currently developing spring-loaded funnels.	Utilize closed-top fumels; keep all drums sealed; develop and implement an inspection and maintenance plan for hazardous waste containers.
H2	Hazardous waste storage area	WAC 173-303-630(5)	Rows of hazardous waste containers were stored with aisle spaces of only 12-14 inches; some drums were turned so that labeling was unreadable.	Separate pallets of hazardous waste to a minimum 30-inch aisle space; orient drums so labels are readable.
Н3	Hazardous waste storage area	WAC 173-303-630(8) and (9) UFC 80.301	Incompatible materials stored with hazardous waste (acids and combustibles stored together).	Store incompatible materials in another Iccation separate from the hazardous waste sbrage area.
H4	Hazardous waste storage area	WAC 173-303-630(6)	No decumentation of weekly inspections.	Document weekly inspections of hazardous waste storage area.

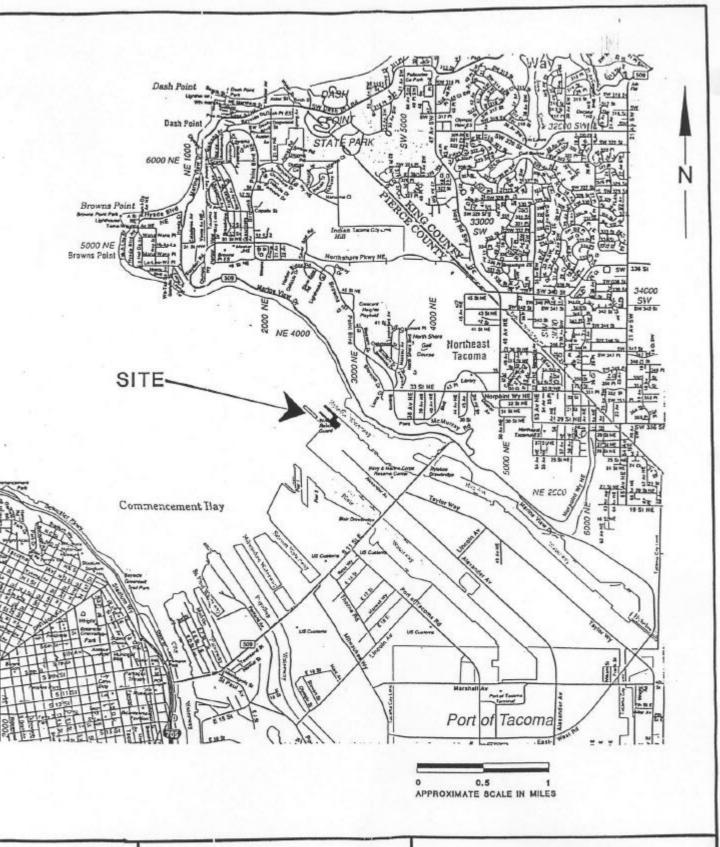
ATTORNEY-CLIENT PRIVILEGED	
Summary of Environmental Review Findings and Recommendations	(Page 4 of 4)

H5 H6 H7	Hazardous waste storage			
H6 H7	area	WAC 173-303-630(7)	No secondary containment.	Construct secondary containment.
Н7	Hazardous waste storage area and distillation area	WAC 173-303-630(8) UFC 10.505	Fire extinguishers not properly labeled with latest inspection or charging date.	Inspect and label properly all fire extinguishers on site.
	Hazardous waste storage area	WAC 173-303-200(1)(c) WAC 173-303-630(3)	Hazardous waste containers were not clearly labeled as "Hazardous Waste" or with accumulation start date.	Turn drums so that labels are clearly visible; ensure all hazardous waste drums are properly labeled, including the accumulation start date.
Н8	Hazardous waste storage area	WAC 173-303-630	Hazardous waste accumulation area not clearly marked with words "Hazardous Waste" or "Dangerous Waste."	Post hazardous waste signs.
Н9	Hazardous waste storage area	WAC 173-303-630(8) UFC 79.114 UFC 79.117(a)	Sprinkler system appeared inadequate for hazardous waste storage area; electrical fixtures in area were not explosion-proof.	Verify hazardous waste storage area sprinklers and electrical fixtures are adequate for the facility.
		Enviro	Environmental Media: Solid Waste	
S1	Facility housekeeping	WAC 173-304-200	Spent ABM was present on the ground in numerous locations near storm drains, crane rails, track drains, etc.	Increase frequency of cleaning.
23	Wastewater treatment sludge disposed on spent ABM pile.	WAC 173-303-70 40 CFR 261.24	No documentation of acceptability of disposal of wastewater treatment sludge along with spent ABM.	Test sludge for leachable metals by TCLP.
S	Welding slag disposal	WAC 173-303-70 40 CFR 261.24	No documentation of acceptability of disposal of welding slag as a non-hazarcous solid waste.	Test slag for leachable metals by TCLP.

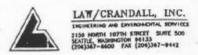
**TABLE** 

Port of Tacoma 2301-30027





NGTON



SITE LOCATION MAP

AK-WA, INC.

TACOMA, WASHINGTON

JOB NO. 2301-30027 FIGURE 1

APPENDIX A

Media-Specific Findings

### Media-Specific Findings

Media:

Air

Finding A1:

Air contaminant sources at the AK-WA facility were neither registered nor

exempted from registration by PSAPCA.

Regulatory Cite:

PSAPCA Regulation I Section 5.03.

Discussion:

During the site visit of March 17, 1993, no documentation was available to indicate that AK-WA had registered any air contaminant sources with the Puget Sound Air Pollution Control Agency. Also, no documentation was available indicating that PSAPCA had exempted any sources from registration. Sources that may require registration included dry blasting, spray painting within the drydock or within the painting sheds, welding, and any source involving volatile organic compounds (e.g. the solvent still).

Recommendation:

Demonstrate compliance with PSAPCA Regulation I and provide copies of notices of registration or exemption, or the PSAPCA annual report.

Recommended time for correction: 180 days.

Finding A2:

Spray coating operations were conducted outside or in temporary facilities which were not registered with PSAPCA and which did not incorporate

dry filters or wash water curtains.

Regulatory Cite:

PSAPCA Regulation I Section 9.16.

Discussion:

During the site visit of March 17, 1993, we observed evidence of spray coating operations which were conducted outdoors or conducted in temporary sheds. PSAPCA requires that coating operations be conducted in an enclosed spray area with control apparatus unless either specifically exempted by PSAPCA or written approval from the Control Officer is obtained in advance. Additionally, there was evidence of overspray on the

soil in the spray paint shed.

Recommendation:

Demonstrate compliance with PSAPCA Regulation I and provide documentation of compliance with Regulation I Section 9.16.

Recommended time for correction: 180 days.

Port of Tacoma 2301-30027 A-1

Finding A3: AK-WA had not completed PSAPCA annual reporting.

Regulatory cite: PSAPCA Regulation I, Section 5.02; Regulation III, Section 1.11.

Discussion: During the site visit of March 17, 1993, no documentation was available

to indicate that AK-WA had filed any annual reports with PSAPCA. PSAPCA requires annual reports on both registered sources and toxic

contaminant sources and volumes.

Recommendation: Demonstrate compliance with the PSAPCA Regulation I and provide

documentation of compliance with Regulation 1, Section 5.02 and Regulation III, Section 1.11. Recommended time for correction: 180

days.

Finding A4: AK-WA does not have an Operations and Maintenance Plan for spray

coating operations.

Regulatory Cite: PSAPCA Regulation II Section 3.04 and PSAPCA "Compliance Guidance

For Spray Coating Operations."

Recommendation: Demonstrate compliance with PSAPCA Regulation II. Recommended

time for correction: 90 days.

Finding A5: AK-WA has not submitted a Toxic Chemical Release Inventory Report or

determined that submittal is not required.

Regulatory Cite: PSAPCA Regulation III, Section 1.11.

SARA Section 313; (92 USC 11022).

Discussion: On March 10, 1993, Ecology requested that AK-WA determine if enough

material is used to require Form R reporting for MEK.

Recommendation: Demonstrate compliance with Toxic Chemical Inventory Report

requirements of SARA Section 313 and PSAPCA Regulation III.

Recommended time for correction: 180 days.

Media:

Water

Finding W1:

AK-WA has not met several of the effluent requirements of its NPDES

permit. Ecology has not been notified.

Regulatory Cite:

NPDES Permit No. WA-004014-2.

Discussion:

Review of the AK-WA Discharge Monitoring Reports for January 1993, November 1992, August 1992, May 1992, January 1992, and November 1991 indicated that discharges frequently exceeded concentration limits for total suspended solids, copper, zinc, and lead. The NPDES permit requires that exceedances to the permit be explained to Ecology and that

a plan to eliminate the exceedances be enacted.

Recommendation:

Demonstrate compliance with the NPDES permit effluent limits. Copper and zinc exceedances may indicate copper slag ABM in the storm drain system. The Best Management Practices Plan requires removing the spent ABM from the streets on a regular basis. Increase the frequency of cleaning to reduce the amount of spent ABM washing into the storm drains. Alternately, a modification of the permit limits may be obtained.

Recommended time for correction: 180 days.

Finding W2:

Spent ABM can enter Commencement Bay from the seams in the drydock.

Spent ABM was present at numerous locations in the drydock.

Regulatory Cite:

NPDES Permit WA-004014-2.

Best Management Practices Plan.

Discussion:

The floating drydock is constructed in sections. Spend ABM can enter the Hylebos Waterway from the drydock through seams between the sections. Spent ABM is removed from the drydock floor only at the end of each

major blasting episode and before flooding the drydock.

Recommendation:

Document compliance with the NPDES permit and Best Management Practices Plan. Develop a more site-specific BMP plan which includes increased cleaning frequency and/or containments for the spent ABM.

Recommended time for correction: 180 days.

Finding W3:

AK-WA must submit a sediment monitoring plan to Ecology by June 28,

1993.

Regulatory Cite:

NPDES Permit WA-004014-2.

Recommendation:

Submit a copy of the sediment monitoring plan to the Port of Tacoma. This plan should be coordinated with the Urban Bay Action Team Requirements for Hylebos Waterway. Recommended time for

implementation: Due on June 28, 1993.

Finding W4:

No documentation was available to indicate that AK-WA was permitted or exempted from permitting for discharge of industrial wastewater from its treatment system to the city of Tacoma sanitary system.

Regulatory Cite:

Discussion:

Tacoma City Ordinance Chapter 12.08 - Sewage Disposal Regulations and Rates.

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During the site visit of March 17, 1993, we noted that the wastewater treatment system discharges were directed to a tank. AK-WA personnel reported that the tank was transported to a sanitary sewer connection and emptied into the city of Tacoma sewage system. No documentation existed which demonstrated permission for these ongoing discharges to the city.

Recommendation:

Demonstrate compliance with Tacoma City Ordinance Chapter 12.08. Recommended time for correction: 90 days.

Finding W5:

No documentation was available of methods or procedures for removing accumulated rain water in secondary containments at the solvent distillation unit, phosphoric acid dip tanks, diesel tank, waste oil tank, and gasoline and lubricating oil storage areas.

Regulatory Cite:

NPDES Permit WA-004014-2 WAC 173-303-640(4)(b) 40 CFR 112.7(e)

Recommendation:

Demonstrate compliance with the secondary containment requirements of the NPDES permit, WAC 173-303-640, and 40 CFR 112.7 Develop and implement methods of removing and disposing of water from

Port of Tacoma 2301-30027 containments. Develop an inspection and documentation system for ensuring that containments are emptied with no release of spilled product. Recommended time for correction: 90 days.

Finding Wo:

Integrity of the secondary containment around the phosphoric acid dip tanks appeared breached. Diesel tank, gas tank, waste oil tank, and distillation unit containments appeared undersized.

Regulatory Cite:

WAC 173-303-640(4)(b)

40 CFR 110.3 40 CFR 110.6 40 CFR 112

Discussion:

During the site visit of March 17, 1993, we noted that the secondary containment around the phosphoric acid dip tanks were constructed of sheet steel walls with a polymer resin bead sealing it to the concrete floor. The seal appeared to be broken in the southwestern corner of the containment. The above-ground diesel tank and gas tank had concrete containments that appeared to be undersized. The waste oil tank was a portable steel tank with a steel pan containment that appeared to be undersized. The distillation unit containment was made of concrete and steel and appeared appropriately-sized but should be documented as to volume and condition.

Recommendation:

Demonstrate compliance with WAC 173-303-640, 40 CFR 110, and 40 CFR 112. Recommended time for correction: 180 days.

Finding W7:

Chain of Custody Records indicated that NPDES discharge monitoring samples were not analyzed for pH until past the EPA-allowed holding time. Also, AK-WA personnel stated that monitoring samples were stored at ambient temperatures between the time of collection and delivery to the laboratory.

Regulatory Cite:

NPDES Permit WA-004014-2

Discussion:

Permit-required analytical methods specify that pH analyses be completed at the time of collection. Certain of the permit-required parameters (e.g. oil and grease, total suspended solids, and volatile organic compounds)

Port of Tacoma 2301-30027 must be kept cool (approximately 4°C) from the time of collection until analysis.

Recommendation:

Demonstrate compliance with approved sampling and analysis methods. Such demonstration may be made by the preparation and use of a Sampling and Analysis Plan that Ecology has reviewed and approved. Recommended time for correction: 120 days.

Media:

Hazardous Waste

Finding H1:

Several containers of hazardous waste were not closed (i.e. had open

funnels installed or unsealed tops).

Regulatory Cite:

WAC 173-303-630(5)(a)

Discussion:

During the site visit of March 17, 1993, we noted that several containers which contained hazardous waste had open funnels installed in the drum bungs or had the lids just placed on the drum with no lock ring installed. AK-WA is currently building spring loaded covered funnels to help

alleviate this problem.

Recommendation:

Demonstrate compliance with WAC 173-303-630(5)(a). Recommended

time for correction: 90 days.

Finding H2:

Rows of containers of dangerous waste (hazardous waste) in the waste storage areas were not stored 30 inches apart from each other.

Regulatory Cite:

WAC 173-303-630(5).

Discussion:

During the March 17, 1993, site visit, the AK-WA hazardous waste storage area contained 18 drums labeled "Dangerous Waste."

Recommendation:

Rearrange the drum rows to allow a 30-inch aisle space. Demonstrate compliance with WAC 173-303-630-(5)(c). Recommended time frame for

correction: 30 days.

Finding H3:

Incompatible materials were stored adjacent to each other in the hazardous

waste storage area.

Regulatory Cite:

WAC 173-303-630(8) and (9).

UFC 80.301

Discussion:

During the site visit of March 17, 1993, we noted that containers marked

"diluted acid" were stored adjacent to containers marked "waste MEK" (a

Port of Tacoma 2301-30027 flammable material). These materials are incompatible with one another, and if mixed could cause a highly exothermic chemical reaction.

Recommendation:

Segregate incompatible materials in the hazardous waste storage area. Demonstrate compliance with WAC 173-303-630(8) and (9) and UFC 80.301. Recommended time for correction: Immediately.

Finding H4:

No documentation of weekly inspections of the hazardous waste storage areas. We observed cigarette butts on the ground just outside and beneath the "No Smoking" signs on the security fence of the storage area.

Regulatory Cite:

WAC 173-303-630(6)

Discussion:

During the site visit of March 17, 1993, no documentation of weekly inspections was available for the hazardous waste storage area. Cigarette butts were on the ground immediately outside the area, under the "No Smoking" signs.

Recommendations:

Demonstrate compliance with WAC 173-303-630(6). Employ an inspection log for the area with at least weekly inspections. Employees should be trained about the hazard of smoking near flammable materials. Recommended time for correction: 90 days.

Finding H5:

Hazardous waste storage area did not have secondary containment.

Regulatory Cite:

WAC 173-303-630(7)

Discussion:

During the site visit of March 17, 1993, we observed that the hazardous waste storage area was located on the concrete floor of the building without containment. Spills or leaks could run onto the concrete and towards the northern door.

Recommendation:

Install secondary containment for the hazardous waste storage area. Demonstrate compliance with WA 173-303-630(7). Recommended time for correction: 180 days.

Finding H6:

Fire extinguishers were not properly labeled with inspection or charging date.

Port of Tacoma 2301-30027 Regulatory Cite:

WAC 173-303-630(8)

UFC 10.505

Discussion:

During the site visit of March 17, 1993, we noted that several fire extinguishers were not labeled with the latest inspection or charging date. AK-WA personnel charge and inspect fire extinguishers on site and are responsible for labeling the fire extinguishers with the date charged or

inspected.

Recommendations:

Demonstrate compliance with WAC 173-303-630(8) and the Uniform Fire

Code. Recommended time for correction: 30 days.

Finding H7:

Hazardous waste containers were not clearly labeled with words "Hazardous Waste" or with accumulation start dates. The labels must not

be obscured or otherwise unreadable.

Regulatory Cite:

WAC 171-303-200(1)(c) WAC 173-303-630(3)

Discussion:

During the site visit of March 17, 1993, several containers stored in the hazardous waste storage area were turned so that the labels were unreadable. One container was not labeled with the accumulation start

date.

Recommendation:

Demonstrate compliance with WAC 173-303-200(1)(c) and WAC 173-

303-630(3). Recommended time for correction: 30 days.

Finding H8:

The hazardous waste storage area was not clearly marked with the words

"Hazardous Waste" or "Dangerous Waste."

Regulatory Cite:

WAC 173-303-630

Discussion:

During our visit of March 17, 1993, we observed that the hazardous waste

storage area was not marked with the words "Hazardous Waste."

Recommendation:

Properly identify the hazardous waste storage area. Post at least one sign

on each side of the area. Recommended time for correction: 60 days.

Finding H9:

The sprinkler system and electrical fixtures appeared inadequate for areas

in the building where flammable liquids were stored.

Regulatory Cite:

WAC 173-303-630(8)

UFC 79.114 UFC 79.117(a)

Discussion:

During our site visit of March 17, 1992, we observed the sprinkler system to be a common water spray system with fuseable links approximately 30 feet above the hazardous waste storage area. We also observed the electrical fixtures to be common industrial fixtures, not explosion- or

vapor-proof.

Recommendation:

Either cease storage of flammable liquids or demonstrate the appropriateness of the present automatic sprinkler system and electrical fixtures for this area. Comply with WAC 173-303-630(8) and the Uniform Fire Code. Recommended time for correction: 60 days.

Media:

Solid Waste

Finding S1:

During our site visit of March 17, 1993, spent ABM was spilled in numerous areas throughout the facility. The spent ABM storage area allowed uncontrolled release of ABM into Commencement Bay.

Regulatory Cite:

WAC 173-304-200

Recommendation:

Demonstrate that the frequency of street cleaning is sufficient to prevent excessive release of spent ABM to Commencement Bay. Recommended time for correction: 90 days.

Finding S2:

During our site visit of March 17, 1993, Mr. Becker stated that the wastewater treatment system sludge (filter cake) is mixed with the spent ABM and disposed of with the spent ABM. No documentation was available to indicate that this method of disposal was acceptable.

Regulatory Cite:

WAC 173-303-70 40 CFR 261.24

Recommendation:

Demonstrate the acceptability of this disposal practice. Show that the sludge is not a dangerous waste per WAC 173-303-70 and obtain written approval from Ideal Cement, the waste recipient. Recommended time for correction: 60 days.

Finding S3:

During our site visit of March 17, 1993, Mr. Becker informed us that welding slag is disposed of in dumpsters as non-hazardous solid waste. No documentation was available to indicate that this method of disposal was acceptable.

Regulatory Cite:

WAC 173-303-70 40 CFR 261.24

Recommendation:

Demonstrate the acceptability of this disposal practice. Show that the welding slag is not a dangerous waste per WAC-173-303-70 and obtain written approval from the city of Tacoma, the waste recipient.

Recommended time for correction: 60 days.

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	4. SITE CONTACT MAILING ADDRESS
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### Appendix 8

### TSD OR RECYCLING FACILITY RECYCLING CREDIT PERCENTAGE SHEET FOR 1992

(Retain completed percentage sheets in your files, do not sent to Ecology)

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ADDRESS:	401 ALEXANDER AVE BI	DG 9588	
CITY:	TACOMA	STATE:_WA.	ZIP: 98421
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ADDRESS:	1825 ALEXANDER AVE		
CITY:	TACOMA	STATE:WA	ZIP: 98421
EPA/STATE ID	#: WAD981769110	_ <del>_</del>	
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METHYL ETHY	WASTE DESCRI	DROLTHANE, ACETONE,	
TOLUENE 1	L KETONE, 111TRICHLO	OROLTHANE, ACETONE, XYLENE	48%
TOLUENE 1	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1	L KETONE, 111TRICHLO	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1 PAINT SOLIE XYLENE, PAI	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE	48%
TOLUENE 1 PAINT SOLIE XYLENE, PAI	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET NT PIGMENTS, DEBRIS	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE 3300 LBS	48%
TOLUENE PAINT SOLII XYLENE, PAI	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET NT PIGMENTS, DEBRIS	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE 3300 LBS	48%
TOLUENE DAINT SOLIE  XYLENE, PAI  XYLENE, PAI  Section E  NAME:	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET NT PIGMENTS, DEBRIS	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE 3300 LBS	48%
TOLUENE PAINT SOLII XYLENE, PAI	L KETONE, 111TRICHLO 6530 LBS S W/METHYL ETHYL KET NT PIGMENTS, DEBRIS	OROLTHANE, ACETONE, XYLENE TONE, TOLUONE, ACETONE 3300 LBS	48%

### Appendix 8

### TSD OR RECYCLING FACILITY RECYCLING CREDIT PERCENTAGE SHEET FOR 1992

(Retain completed percentage sheets in your files, do not sent to Ecology)

			•
GE	NERATOR		<del>-</del>
AK-WA, INC.			
401 ALEXANDER AVE	BLDG 9588		
TACOMA	STATE:_	WA.	ZIP: 98421
		•	
TSD OR REC	YCLING FA	CILITY	
			· .
•	· · · · · · · · · · · · · · · · · · ·		*
CACOMA	STATE:_	WA.	ZIP:_98421
:WAD981769110			
		According to the Comment of the Comm	
			Section D
WASTE DESCR	IPTION		PERCENT RECYCLES
KETONE, 111TRICH	LOROLTHANE,	ACETONE,	
			48%
			46%
T PIGMENTS, DEBRIS	3300 LBS		
<del></del>			
	···		
•			I .
			-
ALICE A. ROSS, 7		ORD./SCHEDU	LING
		ORD./SCHEDU	LING
(Authorized Representative)		ORD./SCHEDU	LING
	TACOMA  TSD OR REC  SOL-PRO INC.  1825 ALEXANDER AVE  FACOMA  WASTE DESCR  KETONE, 111TRICHI  530 LBS	TACOMA STATE:  7. WAD144405198 PHONE:  TSD OR RECYCLING FA  SOL-PRO INC.  1825 ALEXANDER AVE  FACOMA STATE:  WAD981769110  WASTE DESCRIPTION  KETONE, 111TRICHLOROLTHANE,  1530 LBS  W/METHYL ETHYL KETONE, TOLU	1825 ALEXANDER AVE  TACOMA STATE: WA.  : WAD981769110  WASTE DESCRIPTION  KETONE, 111TRICHLOROLTHANE, ACETONE,

XXXXXXXXXXXX



TATE OF WASHINGTON

### DEPARTMENT OF ECOLOGY

7272 Cleanwater Lune, (USF) 🧸 - Ampia, Cashington 96504-6611 🔒 2.60 7772 73

May 4, 1993

CERTIFIED MAIL

Mr. Rocky Becker AK-WA, Inc. 401 Alexander, Bldg. 588 Tacoma, WA 98421-4200

Dear Mr. Becker:

The purpose of this letter is to update the testing schedule for NPDES Permit Number WA-004014-2 in effect at your facility.

### S2.A. Stormwater

AK-WA has been conducting monthly sampling for oil and grease, total suspended solids, pH, and total recoverable (TR) copper, lead, zinc, nickel and mercury on all stormwater discharges (002,003, & 004). In addition, AK-WA has conducted quarterly sampling for volatile organic compounds (VOCs).

VOCs have not been detected in toxic amounts in stormwater discharge 002, 003, and 004, therefore, monitoring is eliminated. AK-WA is required to reapply 180 days prior to the expiration date (August 1, 1996) of the permit. As part of the renewal application, a gas chromatograph/mass spectrometer (GC/MS) analysis for all discharge points shall be conducted and reported on Form 2C. This analysis must be performed by an accredited laboratory.

TR lead, nickel, and mercury, for the last 6 monthly rain events, were not detected in toxic amounts in stormwater discharge 002, 003, and 004, therefore, monitoring for these parameters are eliminated. As part of AK-WA's renewal application, a one-time sampling event shall be conducted and analyzed for TR lead, nickel, and mercury in stormwater discharges 002, 003, and 004. The results shall be reported on Form 2C. AK-WA shall ensure that the analytical detection limits are equal to or below the required effluent limits outlined in S1.A. of the NPDES permit.

Oil and Grease, Total Suspended Solids, TR copper, and TR zinc have exceeded effluent limitations outlined in S1.A. of the NPDES permit. AK-WA shall continue monthly monitoring for all of these parameters, including flow and pH. In accordance with S10.H. of the permit, AK-WA shall submit an engineering report within three months of receipt of this letter. The engineering report shall be prepared in conformance with WAC 173-240-110 through 173-240-180. The report shall outline options for meeting stormwater effluent permit limitations outlined in S1.A. for oil and grease, total suspended solids, TR copper, and TR mine. If treatment and collection facilities are required, minimum design criteria shall be based on the stormwater flow from a 6-month,

Mr. Rocky Becker Page 2 May 4, 1993

24-hour storm event<sup>1</sup>. After Ecology has reviewed and approved the engineering report, the dates in S10.H. shall be modified to reflect actual submittal dates and the proposed operational date.

Since copper and zinc are known "toxic pollutants", AK-WA will be required to submit an engineering report and schedule to attain compliance with the effluent limitations in S1.A of the permit. Any acute toxicity testing conducted prior to the operational date for stormwater treatment would show Acute toxicity. Therefore, the Acute Toxicity Stormwater Biomonitoring Study required in S6.A. of the permit shall be extended by the amount of time it takes to complete construction and/or implement options for meeting stormwater effluent limitations.

### S2.B. Drydock discharges from hydroblasting

AK-WA no longer discharges hydroblasting wastewater to the Hylebos Waterway. As of August 1, 1992, AK-WA treats hydroblasting wastewater with a "Beckart Wastewater Treatment System" prior to discharging the effluent to the City of Tacoma Central Treatment Plant. Currently, whenever AK-WA discharges to the Central Treatment Plant, they submit a request for coverage under Municipal Code 12.08.365, Special Approved Discharge. AK-WA has currently submitted application for coverage under a Pretreatment Permit. City of Tacoma has commented to AK-WA's application on March 25, 1993. AK-WA is preparing a response. Therefore, the effluent limitations (S1.C.) and monitoring requirements (S2.B.) are eliminated.

### C. Drydock Discharges at Undocking

AK-WA has been collecting samples during the launching of vessels that were on the drydock more than four days. The parameters tested for in both background waters (Hylebos Waterway) and dry dock launch water are oil & grease, total suspended solids, pH, and total recoverable copper, lead, and zinc, and dissolved copper, lead, and zinc.

The objective of the sampling program is to characterize water quality from the launching of vessels and determine if source control Best Management Practices (BMPs) are protective of the water quality standards. Also, results were to be used to verify the concentration of pollutants in the waste stream and, as necessary, to establish a data base from which effluent limitations can be developed.

Tables for outfall no. 1, is derived from NPDES monitoring conducted by AK-WA's shippard personnel. Six grab samples are collected and composited at the contract laboratory. The grab samples are collected at depths of 18-inches, 8-feet, and 12-14 feet on both sides of the dry dock for a total of six grab samples. These samples are transported to the contract laboratory where they are composited.

<sup>&</sup>quot;Stormwater Management Manual for the Puget Sound Basin", (The Technical Manual, Volume III - Runoff Control), Ecology, February 1992.

Mr. Rocky Becker Page 3 May 4, 1993

A review of the data shows that prior to the fourth quarter (5-7/92), the results for zinc, copper, and lead in background samples were high and not supported by other data on metal concentrations in the Hylebos Waterway. Ecology split samples in May of 1992 with AK-WA. Ecology's results were lower than AK-WA's contract laboratory results. Therefore, values reported in AK-WA DMRs for metals from 8-10/91 through 2-4/92 are found to be suspect. AK-WA changed their contract laboratory in June 1992.

The sample container holders that are attached to the walls of the dry dock are made of galvanized metal. Zinc will leach out of galvanized metal and may contaminate the samples. The possible contamination may result in high analytical measurements for zinc. Therefore, the results to date do not represent the actual discharge zinc concentrations. AK-WA is currently replacing the metal holders with wood.

Because of the above sampling problems, AK-WA shall continue the undocking discharge monitoring program. After an additional 12-months of monitoring data is submitted, Ecology will review the data. If metals concentrations at that time exceed amounts specified in 173-201A-040 WAC, Ecology will add effluent limitations for these toxic metals and the frequency of testing will be modified to reflect the findings of the review.

### S7. Sediment Monitoring

Ecology has no objection to AK-WA coordinating the NPDES sediment monitoring study with the sediment study the Port of Tacoma is requiring for lease renewal. Enclosed for your use are the following handouts:

- 1. An outline which lists the appropriate contents of a Sediment Sampling and Analysis Plan.
- A list of qualified sediment consultants.

If you have any questions regarding the Sediment Sampling and Analysis Plan, please contact Brenden McFarland, Ecology, Sediment Management Unit at (206) 438-7620.

If you have any questions, please telephone me in Olympia at (206) 586-6240.

Sincerely,

Sandra Stephens
Compliance Inspector
Urban Bay Action Team
Toxics Cleanup Program
Southwest Regional Office

cc: Karen Keeley, EPA
Brenden McFarland. Ecology
Cindy James, Ecology
Dave Smith, Ecology

## DER SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 001

# UNDOCKING DISCHARGE REPORTS

Date			Stan	pH Standard Units	nits			110	oil & Grease mg/L	98			Total S	uspendeu mg/L	Total Suspended Solids mg/L	
		Background	puno.		Discharge	90	Backg	Background	ra	Discharge	ge	Backg	Background	2	Discharge	6
Frequency		Min	Мах	Min	Avg	Мах	Avg	Нах	Kin	BAY	Мах	Avg	Hax	Min	Avg	Мах
16/01-8	1	7.5	7.7	7.1	7.3	7.4	<0.5	<0.5	<0.5	6.5	3.4	17.3	25.7	9.1	21.1	29
11/91-1/92	,			8.9	7.3	7.6			<0.5	3.5	11.2			5.9	100.0	205
2-4/92	2	7.3	7.6	7.6	7.7	7.8	1.7	2.6	1.9	2.5	3.0	12.1	21.0	22.0	(5.1	89
5-7/92	473	7.6	7.7	7.4	7.5	9.7	2.0	0.9	0.3	1.3	2.7	2.8	5.2	18.0	55.8	9.5
8-10/92	170	6.6	8.2	6.7	7.4	8.1	3.4	16.0	<0.1	5.5	27.0	6.6	15.0	10.0	€.03	63
11/92-1/93 2		7.1	7.6	6.7	7.2	7.6	<0.1	<0.1	<0.1	0.4	9.0	4.7	7.0	16.0	23.0	30
Sample type composite.	odwo	itte.														

Frequency of analysis is based on the number of ships that were dry docked greater than 1-days and launched for that quarter.

Effluent limits have not been established for undocking discharge water. Areas shaded exceed hydroblasting daily maximum effluent limitations for outfall no. 001.

<sup>&</sup>quot;Background frequency 3.

Background frequency 5

### DAR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 001

# UNDOCKING DISCHARGE REPORTS

Date		Toi	Total Copper ug/L	per			Disso	Dissolved Copper ug/L	opper			T(	Total Lead	pı	
	Background	puno		Discharge		Background	puno.		Discharge		Backg	Background		Discharge	
Frequency	Avg	Мах	Kin	Avg	Мах	gay	Nax	Nin	Avg	Мах	Avg	Мах	Nin	Avg	Мау
8-10/91 1	323.3	1140	001×	436.7	008	123.3	079	<100	156.7	440	16.7	100	<100	16.7	100
11/91-1/92 1			210	3302.5	2600			190	517.5	890			<100	138.8	280
2-4/92 2	75.0	90	730	1055.0	1380	60.0	90	210	1655.0*	2800	<100	<100	<100	<100.0	<100
5-7/92 42	26.3	59	63	463.8	870	6.3	16	27	162.3	339	0\$>	o#>	04>	<40.0	03>
8-10/92 6 <sup>13</sup>	32.€	108	87	748.8	2515	9.2	16	11	258.5	628	**	09	0#>	<40.0	<b>0†</b> >
11/92-1/93 2 11	11.5	15	159	210.0	261	5.5	8	<2	46.0	80	<40	O <b>\$</b> >	O\$>	46.0	52

Sample type composite.

Frequency of analysis is based on the number of ships that were dry dock greater than 4-days and launched for that quarter.

Shaded areas exceed Acute marine water quality criteria amounts specified in 173-201A-040 WAC.

\* means dissolved results are greater than total results.

<sup>&</sup>quot;Background frequency 3.

Background frequency 5.

DAR SUMMARY AK-WA INC. PERMIT NO. WA-004014-2 OUTFALL NO. 001

# UNDOCKING DISCHARGE REPORTS

Date		Dis	Dissolved Lead	Load			To	Total Zinc ug/L	20			Dis	Dissclved Zinc ug/L	Zinc	
	Background	round		Discharge		Background	puno.	7	Discharge		Backg	Background		Discharge	
Frequency	Avg	Max	Nin	Avg	Мах	Avg	Мах	Min	Avg	Kax	Avg	Маж	Kin	Avg	Нах
16/01-8	16.7	100	<100	16.7	100	293.3	009	100	158.3	200	205.0	00₽	100	205	300
11/91-1/92			<100	52.5	210			290	1620.0	3150			200	(65	099
2 4 /62	<100.0	<100	<100	<100.0	<100	115.0	140	<b>4</b> 70	1165.0	1900	0.011	150*	250	1125	2000*
5-7/92	ex <40.0	0\$>	0\$>	<10.0	0\$>	15.0	33	77	5.665	320	14.3	31	55	120	581
8-10/92 827	40.0	<b>0</b> *>	<b>07</b> >	<10.0	07>	9.8	16	59	275.8	986	9.4	14	23	<b>9</b>	. E61
11/02-1/93 2	<40.0	°40	0\$>	<10.01>	<40	16.0	20	63	96.0	129	9.0	12	<b>\$</b>	18	30
Sample type Composite	posite.														

Frequency of analysis is based on the number of ships that were dry dock greater than 4-days and launched for that guarter.

Shaded areas exceed Acute marine water quality criteria amounts specified in 173-201A-040 WAC.

\* means dissolved results are greater than total results.

Background frequency 3.

<sup>&</sup>quot;Background frequency 5.

### Outline of Sampling and Analysis Plan Components

- A. Introduction
  - 1. Project Description and brief background
- B. Goals and Rationale
  - 1. Clearly State Goals of Sampling Effort and Identify Rationale for
    - Regulatory and Technical/Functional Requirements to be
- C. Sampling and Testing Design
  - Sample Data
    - a. Type (chemistry, bioassay, etc.)
    - b. Depth (2 cm surface sediments only, discrete samples at 10cm vertical intervals from a core, etc.)
    - c. Locations
    - d. Composites
  - 2. Sampling Dates
  - 3. Sampling Equipment and Methods
  - 4. Station Positioning Methods
  - 5. Description of:
    - a. Sample Handling and Custody Procedures
    - b. Methods for Chemical Analyses and Biological Testing
    - c. QA/QC Procedures
  - 6. Protocols to be used for Reporting Results and Data Submittal
  - 7. Contingency Plans
  - 8. Personnel and Responsibilities
  - 9. Health and Safety Plan

### CONSULTANTS FOR SEDIMENT MANAGEMENT SERVICES

#### February 9, 1993

This list is provided as a public service by the Sediment Management Unit, Washington State Department of Ecology. The list represents known consultants who conduct sediment management services. It should be considered incomplete and it does not constitute an endorsement of any firm by the Department of Ecology. For further information on this list, please contact Brenden McParland at (206) 438-7620.

APPLIED GEOTECHNOLOGY, INC. 300 120TH AVENUE NE BUILDING 4, SUITE 215 POST OFFICE BOX 3885 BELLEVUE WA 98009 (206) 453-8383

DAVID EVANS & ASSOCIATES 301 116TH AVENUE SE, #170 BELLEVUE WA 98004 (206) 455-3571

PTI ENVIRONMENTAL SERVICES 15375 SE 30TH PL., SUITE 250 BELLEVUE WA 98007 (206) 643-9803

ENSR 14715 NE 95TH STREET SUITE 200 REDMOND WA 98052 (206) 881-7700

LANDAU ASSOCIATES, INC. POST OFFICE BOX 1029 EDMONDS WA 98020 (206) 778-0907

BATTELLE NORTHWEST 439 WEST SEQUIN BAY ROAD SEQUIM WA 98382 (206) 693-4151

SAIC 625 COLUMBIA STREET OLYMPIA WA 98501 (206) 754-7077

LAYTON AND SELL, INC. 15600 REDMOND WAY SUITE 302 REDMOND WA 98052 (206) 881-8151

TETRA TECH, INC. 11820 NORTHRUP WAY, SUITE 100 BELLEVUE WA 98005 (206) 822-9596

ECOCHEM 911 WESTERN AVE., SUITE 523 SEATTLE WA 98101 (206) 233-9332

JAY SPEARMAN & ASSOCIATES POST OFFICE BOX 2176 KIRKLAND WA 98083 (206) 820-1739

ECOLOGY AND ENVIRONMENT, INC. 101 YESLER WAY, SUITE 600 SEATTLE WA 98104 (206) 624 9537

PENTEC ENVIRONMENTAL 120 WEST DAYTON, SUITE A-7 EDMONDS WA 98020 (206) 775-4682

SAIC 18706 NORTH CREEK PARKWAY, 110 BOTHELL WA 98011 (206) 485-5800

# CONSULTANTS FOR SEDIMENT MANAGEMENT SERVICES

(continued)

February 9, 1993

EVS CONSULTANTS 2335 EASTLAKE SEATTLE WA 98102 (206) 328-4188

PARAMETRIX 13020 NORTHUP WAY BELLEVUE WA 98005 (206) 455-2550

HARTMAN ASSOCIATES 810 3RD AVENUE, SUITE 408 SEATTLE WA 98104 (206) 382-0388

HART CROWSER 1910 FAIRVIEW AVENUE E SEATTLE WA 98102 (206) 324-9530

ROY F. WESTON 201 ELLIOTT AVENUE, SUITE 500 SEATTLE WA 98119 (206) 286-6000

BOATENG & ASSOCIATES 8005 SE 28TH MERCER ISLAND WA 98040 (206) 236-6231 GOLDER AND ASSOCIATES 4104 NE 148TH AVENUE REDMOND WA 98052 (206) 883-0777

CH2M HILL POST OFFICE BOX 91500 BELLEVUE WA 98009 (206) 453-3000

ENVIROS CORPORATION 10900 NE 4TH ST., SUITE 600 BELLEVUE WA 98004 (206) 827-5255

DAMES AND MOORE 500 NARKET PLACE TOWER 2025 1ST AVENUE SEATTLE WA >6121-2100 (206) 728-0744

URS CONSULTANTS, INC. 1100 OLIVE WAY, SUITE 200 SEATTLE WA 98101 (206) 623-1800

# ACCREDITED LABS FOR SEDIMENT QUALITY ANALYSIS

February 9, 1993

This list is provided as a public service by the Sediment Management Unit, Washington State Department of Ecology. The list represents known accredited laboratories who conduct sediment quality chemical and/or biological analyses services. The list should be considered incomplete and it does not constitute an endorsement of any firm by the Department of Ecology. For further information on this list, please contact Tom Gries at (206) 438-7706.

COLUMBIA ANALYTICAL SERVICES, INC. POST OFFICE BOX 479 KELSO WA 98626 (206) 577-7222

WEYERHAEUSER ANALYTICAL AND TESTING SERVICES WTC 2F25 TACOMA WA 98477 (206) 924-2345

SOUND ANALYTICAL SERVICES, INC. 4813 PACIFIC HIGHWAY E TACONA WA 98424 (206) 922-2310

LAUCKS TESTING LABS., INC. 940 SOUTH HARNEY REATTLE WA 98108 (206) 767-5060

BATTELLE PACIFIC NW LABS. MARINE SCIENCES LAB. 439 WEST SEQUIM BAY ROAD SEQUIM WA 98382 (206) 693-4151

NORTH CREEK ANALYTICAL 18939 - 120TH AVENUE NE SUITE 101 BOTHELL WA 98011 (206) 481-9200 MANCHESTER ENVIRONMENTAL LAB. FOST OFFICE BOX 346 MANCHESTER WA 98353 (206) 871-0748

ANALYTICAL TECHNOLOGIES, INC. 560 NACHES AVENUE RENTON WA 98055 (206) 363-1351

ANTEST, INC. 4603 SE 87TH STREET REDMOND WA 98052 (206) 885-1664

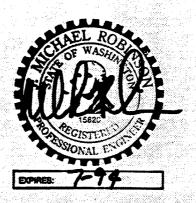
ANALYTICAL RESOURCES, INC. 333-9TH AVENUE NORTH SEATTLE WA 98109 (206) 621-6490

BATTELLE PACIFIC NW LABS. CHEMICAL MEASUREMENTS LAB. POST OFFICE BOX 999 RICHIAND WA 99352-0999 (509) 373-2121 AK-WA, INC.

401 Alexander, Bldg. 588 Tacoma, Washington 98421

SOUTH OF SOU

Engineering Report for Recycling of Hydroblasting Effluent

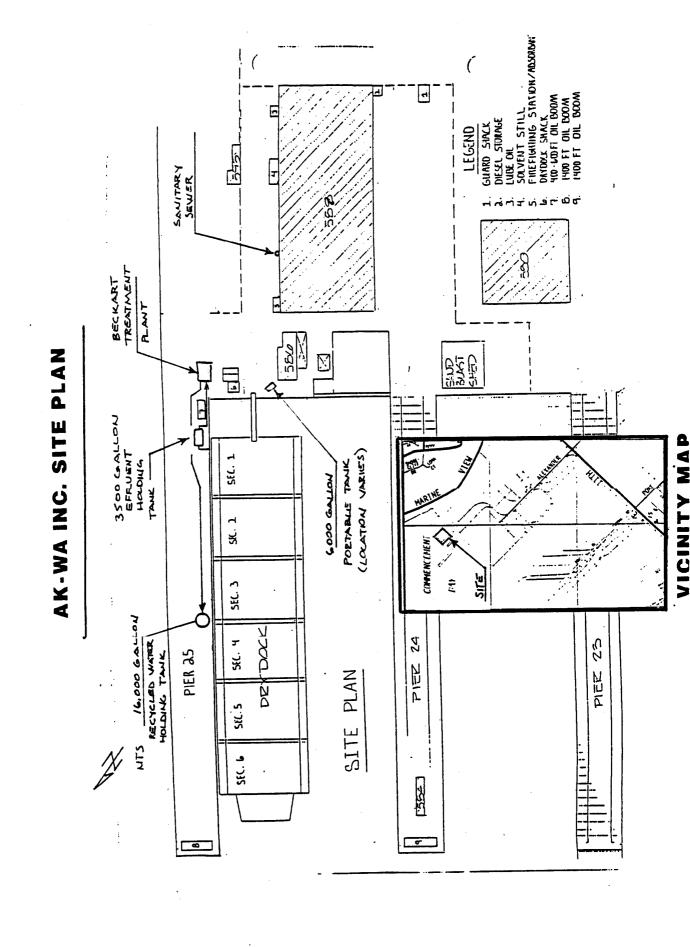


AHR Engineers, Inc.
1308 Alexander Avenue East, Suite B
Tacoma, Washington 98424

(206) 922-2332 (206) 922-0356 FAX

March, 1993 Revised September, 1993 PRINCED

HIK EV**SINEE**S



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## PART I COVER LETTER



June 18, 1993

AK-WA, Inc. 401 Alexander, Bldg. 588 Tacoma, WA 98421

ATTN: Rocky Becker

RE: Revised Engineering Report for Hydroblasting Effluent Recycling System

Dear Mr. Becker:

Pursuant to your request, AHR Engineers has prepared the attached design package for review by the Washington Department of Ecology.

Based on our experience with this and similar installations, we believe this system will treat and recycle hydroblasting effluent in an environmentally acceptable manner if operated properly.

Two copies of this package have been delivered to the DOE for review. We believe our package is complete but we will, of course, address any concerns noted by the DOE. We will keep you apprised of the status of the review.

If you have any questions or need additional information, please give us a call.

Very truly yours,

J. MICHAEL ROBINSON, P.E.

President

Daniel C. Rich, P.E. Project Manager

JMR:DCR:gj

F:93012701,RPT

#### PART II

### DEPARTMENT OF ECOLOGY ENGINEERING REPORT

NOTE: This report has been prepared for the purpose of presenting information on the proposed recycling system in the format preferred by the Washington Department of Ecology for pretreatment systems. There will be no physical connection between the effluent recycling system and the sanitary sewer.

#### PART II

### DOE ENGINEERING REPORT PER WAC 173-240-130

### 2(a) TYPE OF INDUSTRY OR BUSINESS.

AK-WA, Inc. is a ship repairing and fabrication business located on the Hylebos Waterway in Tacoma, Washington. The specific activity requiring treatment is the high-pressure washing (hydroblasting) of ship hulls in the floating drydock. The effluent from the hydroblasters will be collected, treated in the batch treatment plant, disinfected, stored, and recycled for use in the hydroblasting and sandblasting operations.

### 2(b) THE KIND AND QUANTITY OF FINISHED PRODUCTS.

The specific activity requiring treatment does not create a finished product. AK-WA, Inc. is a service industry engaged in ship repair and fabrication. From 12 to 24 ships per year are hydroblasted.

### 2(c) THE QUANTITY AND QUALITY OF WATER USED BY THE INDUSTRY AND A DESCRIPTION OF HOW CONSUMED OR DISPOSED OF.

Each ship will create about 7,000 gallons of wastewater. The primary contaminants in the untreated effluent are heavy metals (up to 41,000 ug/l Total Recoverable Copper and 13,000 ug/l Total Recoverable Zinc). The water supply is the City of Tacoma Water System.

In the past, wastewater from the hydroblasting operation was discharged directly to the Hylebos Waterway without treatment. In August, 1992, AK-WA, Inc. installed a Beckart 1,000 gallon package batch treatment plant to treat the effluent prior to discharge to the City of Tacoma sanitary sewer system. The plant effluent has been well within the City of Tacoma pretreatment standards. However upon approval of this application, the treated water will be recycled onsite.

Domestic sewage is generated only in the buildings. The buildings are served by existing City of Tacoma sewers. AK-WA, Inc. will apply for a separate permit for any future sewer extensions.

There is no real average daily process water flow, since the treatment system operates in a batch mode with days or weeks between batches. If a numerical value is required, it may be obtained by dividing the estimated annual flow by 260 working days per year. With an estimated 12 to 24 ships per year and 7000 gallons per ship, daily average flow would be 325 gpd to 650 gpd.

It takes from two to ten days to hydroblast a ship, depending on the number of operators working. The instantaneous peak flow of each of the four hydroblasters is six gallons per minute, for a total of 24 gallons per minute. The greatest historical daily wastewater production rate is 3,500 gallons per day from all sources, using the present facilities. This rate is not expected to change in the future.

The pierside pressure washing unit is used once or twice a year to clean relatively small parts when the dry dock is occupied. The parts are tilted as necessary to create a low corner that can trap wash water. If capacity is not available in the 3,500 gallon raw wastewater holding tank, portable sump pumps transfer the water to a moveable 6,000 gallon PVC tank, which is normally used for storing gray water from ships under repair. Maximum daily flow from the pierside system is 500 gallons per day. This amount is included in the 3500 gpd maximum daily flow since the pressure washer that is used pierside is operated by one of the four hydroblaster operators who normally work in the drydock.

### 2(d) THE AMOUNT AND KIND OF CHEMICALS USED IN THE TREATMENT PROCESS, IF ANY.

A typical 1000 gallon batch of wastewater will have the following chemicals added for treatment:

- 1) Beckart Polyal-401 (Aluminum Sulfate,  $Al_2(SO_4)_3$  in solution (25% to 36%). 1.5 gallons per batch, for coagulation.
- 2) Hydrated (Slaked) Lime (Ca(OH)<sub>2</sub>) in 5% solution, 24 gallons (10 pounds dry weight) per batch as required to raise pH to 7.
- 3) Beckart B-40 polymer, anionic flocculant, 4 gallons per batch.
- 4) Traces of polymer, naphtha, aluminum sulfate, and calcium hydroxide will be recycled. The only one of the above substances on which regulatory limits are placed would be the naphtha, which would be limited to the 50 milligram/liter of TPH allowed. Actual TPH measurements of three effluent samples showed less than 1 milligram/liter (See Page 10).

### 2(e) THE BASIC DESIGN DATA AND SIZING CALCULATIONS OF THE TREATMENT UNITS.

The treatment facility is a 1,000 gallon batch treatment plant. Raw wastewater is pumped in from a 3500 gallon holding tank located near the drydock. During a treatment run, the plant is cycled as many times as required to empty the holding tank.

The chemical addition quantities and mixing times were determined by the manufacturer on the basis of bench tests made on samples of raw wastewater taken from the raw wastewater holding tank.

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12 to 24 ships will be hydroblasted per year, with an average effluent volume of 7000 gallons each, requiring 84 to 168 treatment batches per year. The average cycle time per batch is two hours.

Holding tanks for raw wastewater and treated water are sized for the convenience of the shipyard, the area available on the pier, and the capacity of the crane that moves the tanks. Apart from the obvious 1000 gallon minimum size, there is no specific required holding tank capacity.

### 2(f) A DISCUSSION OF THE SUITABILITY OF THE SITE FOR THE FACILITY.

The package plant is located on the near the floating drydock and the wastewater holding tank. The 16,000 gallon treated water holding tank will be located adjacent to the drydock.

### 2(g) <u>A DESCRIPTION OF THE TREATMENT PROCESS AND OPERATION (INCLUDE A FLOW DIAGRAM).</u>

Please reference the flow diagram shown on page 14.

- 1) Wastewater from the hydroblasting and sandblasting operations is collected in sumps in each of the six drydock units. A Wilden Model M-2 air-operated diaphragm pump removes wastewater from each sump and discharges it through a 3/4" hose to a 1-1/2" PVC pipe equipped with a ball valve and a swing check valve. Each of the six 1-1/2" pipes is connected to a 2" PVC wastewater header mounted on the drydock. The header on the drydock is connected to the holding tank on the pier. Maximum operating pressure in the wastewater delivery system is about 10 psi.
- 2) The holding tank has a capacity of 3500 gallons: A sight glass is mounted on the tank to show how much capacity remains.
- 3) Wastewater is pumped from the holding tank to the treatment plant by the treatment plant's two process pumps. Each pump operates at about 25 gallons per minute.
- 4) In the treatment plant, the upper tank of the unit is filled with 1,000 gallons of wastewater. The wastewater influent pump is shut off automatically by a floating switch when the proper level is reached. Backflow is prevented by a check valve in the influent line. It takes 15-20 minutes to fill the tank.
- 5) 1.5 gallons of Polyal-401 Aluminum Sulfate coagulant are added by a chemical feed pump operating on a pre-set timer. The coagulant is contained in a 55 gallon drum mounted on the treatment plant and is kept agitated by a mixer. Two mixers in the 1000 gallon tank disperse the coagulant. The coagulant is an acid and reduces the pH to about 4. During the mixing, the process pump is left

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on to circulate water and to add air bubbles. To increase the pH to the required 7, about 24 gallons of 5% hydrated lime solution (10 pounds dry weight) is added. The amount of lime solution is controlled by an automatic pH meter mounted on the tank, which shuts off the feed pump when the correct pH is reached.

- After one minute of mixing, 4 gallons of B-40 polymer flocculant mixture are added by another chemical feed pump controlled by a pre-set timer. The polymer is stored in a 55 gallon drum mounted on the treatment plant. After an additional minute of mixing, the pump and mixer are turned off by a timer. Under quiescent conditions, the flocculated pollutants rise to the surface. This takes approximately 45 minutes. A sight gage on the side of the tank is used to verify that the floc has floated to the top. Additional polymer may be added manually if separation of water and floc is slow.
- After flocculation and flotation, treated water is withdrawn from the mixing tank through a gravity drain at the bottom. The treated effluent then falls through a sheet of filter paper located in the underlying receiving tank. From the receiving tank, the treated effluent is pumped to the 16,000 gallon clean water holding tank near the drydock. The tank will be equipped with a gage to permit the treatment plant operator to tell how much capacity remains in the tank. A mark will be made on the gage to indicate the depth at which 1200 gallons of capacity remain in the tank, which is enough for one additional treatment batch and some extra capacity for thermal expansion.
- 8) The floating sludge follows the cleaned water out the valve in the bottom of the mixing tank, and collects on the filter paper below. The filtered sludge is then removed with a scoop shovel and placed in a 55 gallon drum. Each treatment batch adds about 8 inches of sludge to the barrel. When a drum is filled, it is mixed with spent sandblasting grit, then taken to Ideal Cement in Seattle for disposal. The sludge is not classified as a Dangerous Waste. The filter paper is changed after each treatment batch.
- 9) To prevent the development of septic conditions in the treated water holding tank, an air sparging manifold will be placed in the bottom of the tank to periodically aerate the stored water. The sparging system will be fed by AK-WA's existing compressed air system when conditions warrant (odor, algae formation, or turbidity). The sparging system will deliver a minimum air flow of 50 cfm for one hour.

#### 2(h) ALL NECESSARY MAPS AND LAYOUT SKETCHES.

Please refer to the flow diagram shown on page 14 and to Part V, Appendix 'D', Plan Drawing.

Clean water is pumped to a 16,000 gallon holding tank located near the drydock where it is recycled in the hydroblasting and sandblasting operations (see page 15).

#### 2(i) PROVISIONS FOR BYPASS, IF ANY.

No provisions are made for bypass of wastewater. If the treatment plant is inoperable for any reason, wastewater will be stored in the 3500 gallon holding tank until it is repaired.

### 2(j) PROVISIONS FOR OIL AND HAZARDOUS MATERIAL SPILL CONTROL AND/OR ACCIDENTAL DISCHARGE PREVENTION.

As part of the facility's existing NPDES Permit, AK-WA, Inc. has prepared an oil spill contingency and countermeasure plan (SPCC Plan). A copy is on file in AK-WA, Inc.'s Safety Director's Office and at the DOE. All required facilities are in place and the posting requirements have been met.

Sludge removed from the treatment plant will be mixed on-site with spent sandblast grit, then taken to Ideal Cement in Seattle for disposal.

The three 55 gallon drums of treatment chemicals are stored in a leak-proof steel container that measures 42" by 96" by 5", which has a capacity of 90 gallons. The DOE's BMP S1.50 requires that the containment system have a capacity of 110% of the largest container, or about 60 gallons.

No secondary containment is proposed for the three storage tanks. The reasons for not specifying secondary containment for each of the tanks are discussed below:

1) 3,500 Gallon Raw Wastewater Holding Tank. This horizontal tank was made from a section of a crane mounting pedestal and has a sidewall thickness of about 1.25". It would be virtually impossible to puncture the side of the tank. The ends of the tank are made of 1/2" thick steel which would be very difficult, although not impossible, to puncture. The valve at the bottom of one end wall will be protected by the addition of flanges welded to the end wall that protrude past the end of the valve to protect it from blows from above, below, and from the sides. The bottom fitting of the sight gauge will be protected similarly. The sight glass will be protected only by the rods that are supplied by the manufacturer, but the bottom fitting will be furnished with a ball check valve that will automatically close if the glass is broken.

The Dangerous Waste Regulations allow a variance from the secondary containment requirements if it can be shown that an alternative method will work as effectively as secondary containment (WAC 173-303-640(4)(g)).

2) 6,000 Gallon Moveable Tank (Plerside System). This is a multipurpose tank that is primarily intended for the storing graywater from ships under repair. The tank is pumped out when necessary by a licensed septage hauler (Cascade Septic). Several times a year the tank may also be used to store effluent from the pierside pressure washing operation. Pressure washing is done to clean painted surfaces prior to repainting and is done at a much lower pressure than hydroblasting. Hydroblasting uses a pressure of 2000 to 3000 psi to remove existing paint, which is the major source of heavy metals in the effluent. It is expected that the effluent from pierside pressure washing will have a much lower concentration of heavy metals than hydroblasting effluent.

The 6,000 gallon tank will only be used to store pressure washing effluent if the 3,500 gallon raw wastewater holding tank does not have sufficient capacity. This may happen once or twice a year. The effluent may be stored for two or three days. Given the infrequent use of the tank, the short duration of its use, the mild nature of the effluent, and the difficulty of providing secondary containment for a moveable tank, secondary containment would be impractical for this tank.

3) 16,000 Gallon Treated Water Holding Tank. The contents of the treated water tank are not concentrated enough to qualify as Dangerous Wastes and are therefore exempted from the secondary containment requirement. According to WAC 173-303-090(8)(c), the threshold concentration for Dangerous Waste for TCLP Lead is 5.0 mg/l. The measured effluent concentration of Total Lead was less than 0.04 mg/l (see chart next page).

All discharges from the treatment plant will be stored in the 16,000 gallon clean water holding tank for re-use.

## 2(k) RESULTS EXPECTED FROM THE TREATMENT PROCESS (INCLUDING THE PREDICTED WASTEWATER CHARACTERISTICS, AS SHOWN IN THE WASTEWATER DISCHARGE PERMIT).

The chart below shows the results of three composite samples taken of effluent from the treatment plant on the right.

	Effluent Samples from Beckart Plant		
Analyte	9/4/92	9/18/92	12/14/92
Oils (TPH)	0.6 mg/l	0.9 mg/l	0.8 mg/l
Arsenic	<50. ug/l	<50. ug/l	<50. ug/l
Cadmium	< 3. ug/l	<3. ug/l	<3. ug/l
Chrome	< 7. ug/l	<7. ug/l	<7. ug/l
Chrome (Total)			
Copper	8. ug/l	68. ug/l	32. ug/l
Cyanide			
Cyanide (Total)	<0.05 mg/l	<0.05 mg/l	<0.05 mg/l
Lead	<40. ug/l	<40. ug/l	<40. ug/l
Mercury	<1. ug/l	<1. ug/l	<1. ug/l
Nickel	<15. ug/l	<15. ug/l	<15. ug/l
Silver	<7. ug/l	<7. ug/l	<7. ug/l
Zinc	20. ug/l	44. ug/l	144. ug/l
рН	6.9	7.7	6.9
Temperature			
TSS	21. mg/l	14. mg/i	8.0 mg/l

NOTE: 1000 ug/l = 1 mg/l

See test results in Part V, Appendix 'A' (raw wastewater) and Appendix 'B' (treated wastewater).

It is evident from the test data above that the plant treats wastewater with a high degree of effectiveness.

### 2(I) <u>A DESCRIPTION OF THE RECEIVING WATER LOCATION OF POINT OF DISCHARGE, APPLICABLE STANDARDS, ETC.</u>

All effluent is recycled. It may be necessary to dispose of the recycled water from time to time if the salinity and hardness begin to interfere with the hydroblasting operation. If so, a special permit will be obtained from the City of Tacoma Public Works Department prior to release. Water samples from the treated water holding tank will be taken twice a year and tested for salinity and total hardness. All test results will be forwarded to the City of Tacoma Public Works Department, Technical Support Division, for their review prior to discharge.

2(m) DETAILED OUTFALL ANALYSIS.

Not applicable.

2(n) THE RELATIONSHIP TO EXISTING TREATMENT FACILITIES, IF ANY.

None.

2(0) WHERE DISCHARGE IS TO A MUNICIPAL SEWAGE SYSTEM, A DISCUSSION OF THAT SYSTEM'S ABILITY TO TRANSPORT AND TREAT THE PROPOSED INDUSTRIAL WASTE DISCHARGE WITHOUT EXCEEDING THE MUNICIPALITY'S ALLOCATED INDUSTRIAL CAPACITY.

Not applicable.

- 2(p) Not applicable.
- 2(q) A STATEMENT, EXPRESSING SOUND ENGINEERING JUSTIFICATION THROUGH THE USE OF PILOT PLANT DATA, RESULTS FROM SIMILAR INSTALLATIONS, AND/OR SCIENTIFIC EVIDENCE FROM THE LITERATURE THAT THE EFFLUENT FROM THE PROPOSED FACILITY WILL MEET APPLICABLE PERMIT EFFLUENT LIMITATIONS AND/OR PRETREATMENT STANDARDS.

See cover letter prepared by AHR Engineers. The system is for recycling rather than pretreatment.

2(r) A DISCUSSION OF THE METHOD OF FINAL SLUDGE DISPOSAL SELECTED AND ANY ALTERNATIVES CONSIDERED, WITH REASONS FOR REJECTION.

Samples of the sludge have been analyzed for presentation to waste disposers. AK-WA, Inc. has made arrangements with Ideal Cement Company in Seattle to dispose of the sludge in their cement kiln. This alternative was preferred over land filling because it is complete and final disposal, with less future liability.

2(s) <u>A STATEMENT AS TO WHO WILL OWN, OPERATE, AND MAINTAIN THE SYSTEM AFTER CONSTRUCTION.</u>

The system will be owned, operated, and maintained by AK-WA, Inc.

2(t) <u>A STATEMENT REGARDING COMPLIANCE WITH STATE OR LOCAL WATER</u>
QUALITY MANAGEMENT PLANS.

The existing NPDES Permit requires that contaminated water not be discharged to surface waters of the state. The proposed recycling system satisfies that requirement of the NPDES Permit (WA-004014-2).

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### 2(u) PROVISIONS FOR ANY FUTURE PLANS.

None at this time.

### 2(v) <u>DISCUSSION OF ALTERNATIVES AND REASONS FOR REJECTION.</u>

No other alternatives were found that were as effective, easy to operate, readily available, and economical as the Beckart unit selected.

#### 2(w) TIMETABLE FOR FINAL DESIGN AND CONSTRUCTION.

The treatment system was installed in August, 1992, and has been operating successfully since then. Plan approval is expected on November 1, 1993.

### 2(x) A STATEMENT REGARDING COMPLIANCE WITH SEPA.

It is the stated intention of AK-WA Inc. to comply with all current SEPA regulations.

2(z) Not applicable.